The Builder.

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The "Uglification" of London.

THE author of "Alice in Wonderland" makes one of his characters point out that, if to make anything more beautiful is to "beautify it," why should not making it more ugly be said to "*uglify* it?" And certainly no word could describe various works which have been carried out in London and its suburbs, of late years, so appropriately as the word "uglification"—uglification by the addition of hideous objects, and also by the destruction of those which were beautiful. While we wait from month to month and from year to year in the vain expectation of beholding the beautification of London brought about by the realisation of almost innumerable promised "improvements," it is sad to contemplate the painful fact that the "uglification" of our capital progresses by leaps and bounds.

We do not deny that improvements have been carried out, and when fine buildings have been erected no one has been more ready than we have been to draw attention to the fact. But what we wish to point out is the unfortunate circumstance that while we build up with the right hand we pull down with the left.

The uglification of London is so patent a fact that we can scarcely conceive any one denying it. If so, let such a one go and stand upon London Bridge, and look towards St. Paul's, what will he see? A most interesting and striking view disfigured and half obliterated by a hideous railway terminus. Or let him look towards Westminster from Waterloo Bridge, where another ugly station blocks out the view, and where vast hotels rise up to a preposterous height which imparts no dignity to their design and does not even impress one, except as a dimension, and simply serves to dwarf and diminish the size of everything within sight. Let our spectator then look at the bridges which the past quarter of a century has added, and compare them with London Bridge or Waterloo Bridge, and he will see how in our grandfathers' days they possessed the art of building fine bridges, and how we seem almost to have lost it. What a noble feature such a bridge as Waterloo or London is when built across a mighty river, but how contemptible, from an art point of view, such a structure may be when riddled about with Brummagem-Gothic tracery executed in cast iron, or adorned with huge granite columns supporting nothing or propped up upon vast gas-pipes stuck on end. Samples of each kind "uglify" our river and spoil the effect of beautiful bridges left to us by previous generations.

Walk through the City, "Tell the towers thereof." Alas! you will find them sadly diminished—twenty-five have disappeared, most of them fine works by Wren. Has not this been a master stroke of uglification?

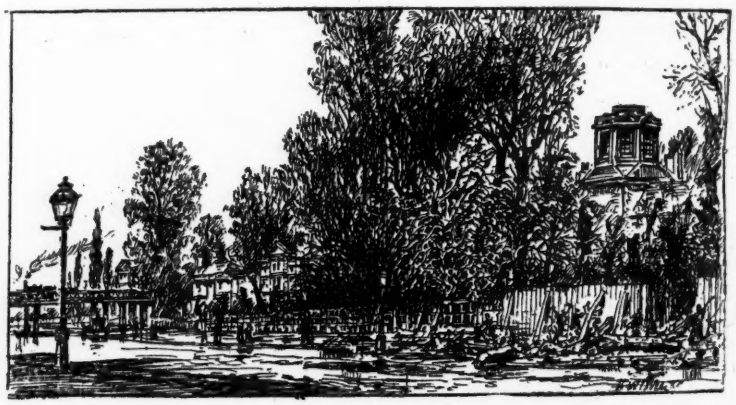
But let us proceed eastward. We shall find the one interesting object in the interminable row of dull streets is threatened with destruction. Bow Church is certainly not a noble example of mediæval architecture, or a specially brilliant piece of design, but its grey, weather-beaten tower comes upon us like the face of an old friend, and it reminds us that not so many years back here was a pleasant London suburb, with fine substantial houses, dignified dwellings of retired city merchants, surrounded by large walled gardens; all are now gone, and the old church is it appears also to become a thing of the past. The tower, at least, ought to be spared.

And now to proceed to the "West End" of London. Let us just walk through that handsome line of thoroughfare with which London was adorned in our grandfathers' days, connecting the beautiful park at the north of the town with that of the south—Regent's Park with St. James's Park. Now we say advisedly that no greater improvement was ever effected in this city than the construction of that line of street, consisting of Gloucester-crescent, Portland-place, Langham-place, Regent-street, the Quadrant, and Waterloo-place. The Regent-street and Waterloo-place sections were carried out from Nash's designs, and the general idea was excellent; unfortunately it was the fashion of that day to do everything in plaster which ought to have been in stone, but the total effect was very striking, the strongly-marked horizontal sky-lines causing these streets to form a very appreciable contrast with Oxford-street, which always was, and will be, an irregular street. But only consider the various "uglifications" which have impaired this, one of the greatest London improvements carried out in former days, and for which our day is responsible. To begin with, when Langham-place was built it was not possible to carry it in one straight line with Portland-place, but to prevent the idea of the thoroughfares coming to an end at this spot, Nash placed his church, All Souls, obliquely, and furnished it with a circular portico so as to round off the corner and give the idea of the continuation of the thoroughfare south. Now, what has been done here of late years? A vast hotel has been erected right at the end of Portland-place, just doing the very thing that Nash had so carefully avoided. What is the consequence? Portland-place looks like a "cul-de-sac," and the whole continuity of the great scheme of our grandfathers' days is ruined. We are not now in any way referring to the design of the hotel in question, but simply to its position. Langham-place is not much altered, but when we come to the Circus (Oxford-street), we notice that all kinds of additions have been made to the houses; here a Mansard roof has been stuck on one house, next door a row of dormers, over the way a wretched iron-cresting, further on a whole new story has been added on to two houses, whereas the one between them is left in its original condition, suggesting a pleasant comparison to a mouth with a tooth knocked out. Where are poor Nash's Classical outlines? But this is as nothing compared to the next item, the greatest crime against London architecture perpetrated in our day, the destruction of Hanover Chapel. How this can have been allowed is unintelligible; that this building, the work of the greatest Classical architect of the century, a most striking design, so happily located, that when we now look at that part of Regent-street we are astonished to find that it was, apart from Cockerell's building, the poorest portion of the whole thoroughfare. It is no new idea that the best things do not receive their full appreciation until they have passed away. Now, when too late, we see how much was owing to Cockerell's fine church. Much is now talked about "originality in architecture," but it is a strange thing that two of the most "original" works of the century should be Cockerell's Hanover Chapel and Augustus Pugin's Ramsgate Church. Neither of the men knew that they were original; both thought they were working according to strict rules of precedent, yet in spite of the severe laws with

Old Bow Church Tower (threatened).

Hanover Chapel, Regent street (now destroyed).

"Uglification" Rampant: a new Suburban street.



"Uglification" in Progress: Woodhouse Park being destroyed.

which they bound themselves down, the gift of originality could not be concealed, and was perhaps the more brilliant from the absence of all striving to attain it. Is it not always so in art? Cockerell and Pugin could not understand one another, and were severe upon each other's work, but in the year 1851 Clarkson Stanfield introduced them to one another; they spent hours in conversation, and each expressed afterwards to Stanfield the same opinion of his former opponent in the same words—"The man is a thorough artist!"

To return, however, to our painful task, a few steps lead us to the "Quadrant," another happy thought of Nash's for the continuation of this fine line of thoroughfare. But the colonnade which gave it half its effect is gone; it was argued that it was a refuge for bad characters, and so the colonnade was destroyed, without, it is to be feared, the beneficial effect on public morals which was supposed to justify its destruction.

At the end of the Quadrant we arrive at what was once a well-planned Circus, still *called* "Regent-circus, Piccadilly." It should be called "The Labyrinth," for anything more confusing or puzzling it would be difficult to conceive. It would appear as though a number of buildings had been placed in a bag and then thrown out "higgledy-piggledy," each inscribed with the words "no connexion with next door;" yet this was supposed to be "an improvement!"

Another matter which is very disfiguring to the whole neighbourhood must be touched upon, and that is the absurd practice of painting houses in the same group different colours. It is not uncommon to find two houses which have a pediment in common, the one painted white and the other damson jam colour; and as the junction takes place in the middle of the pediment the effect is remarkable for its independence of treatment, but is certainly far from pleasing.

We would just ask the question, also, why so many fairly good buildings are pulled down years before their site is required—Carrington House, for instance—leaving great shabby hoarded-up spaces. There is one such in Victoria-street, which has been so long abandoned that quite a luxurious growth of blackberry bushes and brambles covers it.

If "uglification" is seen in the City and the West End, this is as nothing to its gambols in the suburbs. In these unfortunate regions, the local builder may, indeed, sing, "I am monarch of all I *survey!*" Down go beautiful groups of trees, well-built old-fashioned houses, and pleasant groves, to give way to "genteel residences," "depôts," "establishments," gin-palaces, &c. The jerry builder has absolutely invented a new language to describe his operations in these parts, and we fear our dictionaries will have to be corrected for his convenience, because directly these places are built over, the trees cut down and destroyed, and their places occupied by pavements and planted with lamp-posts, they are nominated "Parks," "Groves," "Avenues," "Gardens," &c. It is quite evident that we must reform our language, and we suggest the following corrections to our future dictionary compilers:—

"Park."—A district covered closely with houses, but without either grass or trees.

"Grove."—A street of shops with plenty of flaring gaslights.

"Garden."—A collection of houses without a scrap of ground attached to them.

"Avenue."—Two rows of houses opposite each other with lamp-posts planted at intervals.

In these desirable regions we find uglification in its most advanced stage—firstly destructive, and afterwards creative. Look at Woodhouse Park, Shepherd's Bush, and

the beautiful groups of trees falling beneath the axe, the pleasant, old-fashioned houses pulled down, and the pretty gardens rooted up; then look round the neighbourhood, or prolong your stroll towards Willesden or Fulham, and contemplate the new streets. Houses turned out by the thousand—the same design repeated over and over again; the same dreadful porch, with its arch formed of thin slabs of stone; the same wretchedly carved caps, with "stiff leaved" foliage; the same bow window, which no one can sit in; the same water-closet turret; the same architrave, cornice, ridge tile, finial, &c.; and last, but not least, the same hateful, would-be "picturesque irregularity," repeated over and over again. Now the constant repetition of *regular* architectural forms may become monotonous, though it does not always do so; a colonnade of classical columns may be of any length without wearying the eye, and their constant repetition often gives an impression of grandeur; but the constant reproduction of any irregular design—such, for instance, as a turret at one corner, or of a gable, or porch out of the centre—is simply maddening.

It might have been thought that "stucco" Bayswater had reached the architectural bathos. Notting Hill, however, revealed a lower stratum; for now, alas, the jerry-builder has discovered the "picturesque" and the "original" in architecture. The old-fashioned builder built up his "compo fronts" and porticos after having studied his "book of classical patterns" and looked through his collection of "moulds," and then he turned out his "neat shop-front" or "desirable villa residence," ornamented with "cornice No. 1," "window architrave No. 5," "Doric portico and caps No. 3," and so on. Now, as these things were generally copied from fairly decent classical examples, although of course the effect was dull, yet it was not repulsive. One knew what to expect, and did not take the trouble to look at it; but the ridiculous pretentiousness of the latest kind of small suburban residences must attract your attention, and when the thing is repeated a hundred times over it makes one detest it.

Cannot the modern builder be got to return to his "Classical pattern books," or, if not, will not our architects bring out some "sheets of samples" which will bear constant repetition, and not be either "picturesque" or "original"?

Mr. T. G. Jackson tells us that the jerry-builder is a necessity of the age, and that we cannot do without him even if we would; but surely some means might be found of restraining his "picturesqueness," and confining his "originality" within decent bounds; or is his "freely treated Gothic" and "modified Queen Anne" to pursue its maddening course unchecked? Unfortunately, not only are these structures so ridiculous in themselves, but they utterly ruin the effect of everything else in their neighbourhood. We know a well-designed, quiet Gothic church, which was built a few years back, when it was surrounded by old-fashioned villas, and the general effect was pleasing. But during the last year or so these villas have given way to houses of the "picturesque-original" jerry type, and the poor church is like a good man fallen into bad company.

We may be told—"if you want really to see the beautifications of London, wait until you see the Strand widened; the new public offices built in Whitehall; the ugly block removed between King-street and Whitehall; the grand new street to Holborn; the new bridge over the Thames; the approaches made to the Tower Bridge; the new front to South Kensington Museum erected, etc., etc." Alas, we reply, we are not immortal! Rome, we know, was not built in a day, and probably if the Romans had spent all their time in quarreling about "Betterment," Rome might never have been begun. It is really a very humiliating fact that the past quarter of a century has effected less in Metropolitan improvements than any of the three previous quarters, and there seems little reason to hope that the next twenty-five years will effect more than the past has done. The same evils are still at work; the same absurd introduction of political combinations into questions of art and construction; the same local jealousies and corporation squabbles, the same system of delaying all action by unreasonable opposition continue, and are likely to be fruitful of as much harm in the future as they have been in the past. If something is not done, and that quickly, in the way of, at least, *commencing* the numerous promised improvements of London, the present time may leave behind it as a record and memorial that it was—

A PERIOD
WHICH
DISFIGURED THE FINEST THOROUGHHFARE IN LONDON;
RUINED ITS SUBURBS,
MADE A MESS IN ST. JOHN'S WOOD,
CREATED CONFUSION AT ONE END OF PICCADILLY,
AND A DESERT AT THE OTHER;
ERECTED A HUGE BRIDGE WITHOUT APPROACHES!
AND
PRESERVED HOLYWELL-STREET
FOR
THE ADMIRATION
OF
SUCCEEDING AGES!

NOTES.

Vienna Houses of Parliament. AT Vienna considerable alterations are being made in the Houses of Parliament, which were erected from the design of Hansen, as it is necessary to find accommodation for no less than seventy-two new members above the number of 356 originally provided for. According to the new elections this extra number of seats will have to be provided for almost immediately, and, according to an old statute, it is necessary to find sitting accommodation for all members. Of course the hall is not to be altered architecturally, and the modifications will only be in the seats and in the gangways, but it is curious to observe that whilst in this country it was considered an advantage to provide a smaller Council chamber, with a view of not unnecessarily straining the voices of speakers, nearly all Continental countries have elected to have large semicircular halls with a rostrum in the centre for the orator. It appears curious, from our point of view, to increase the sitting accommodation at Vienna, for it is unlikely, excepting on special occasions, that anything like the whole number of members are ever present at a debate.

London County Council Schemes. THE Council will apply to Parliament in the current session for a further Bill relating to their capital expenditure during six months from April 1 next, and to cognate purposes. The principal projects included within the proposed measure have already been described from time to time in our columns, so it will be unnecessary to say more than that they comprise the following objects:—The provision of sites for a Council chamber and offices, for lunatic asylums, for workshops and a central store, for technical schools, and for stations for gas meter testing-houses and the verification and stamping of weights and measures; the acquisition of the freehold of Fairseat House, Waterlow Park (Highgate), and of White House, Hackney Marsh; the rebuilding of Highgate Archway, and Vauxhall, Isle of Dogs, and Lea bridges; electric lighting on Victoria Embankment, Embankment Gardens, and Waterloo and Westminster Bridges; purchase of tramways; new main and relief sewers, with precipitation works; improvements at Wood-lane, Hammersmith, and Ben Jonson and Blackstock roads, Islington; open spaces; and various schemes under the Housing of the Working Classes Act, 1890.

Street Decoration at Berlin. ONE of the most noticeable features of the festivities at Berlin was the excellence of the general street decorations and particularly of the "Via Triumphalis." It would have been well if some of those entrusted with the arrangement of the Jubilee festivities could have seen what has been done in this respect, thanks to efficient organisation and much voluntary assistance on the part of German architects and artists, who are always ready to help on such occasions. Ever since the sombre decorations for the funeral *cortège* of the late Emperor William I. in 1887 particular attention has been given to street decorations throughout Germany, and we have seen much that was excellent on the occasion of the opening of the North Sea Baltic Canal, the visit of the Russian Emperor to Breslau, and elsewhere. The "Via Triumphalis," in this case, was from the designs of the City Architect, Herr Ludwig Hoffman, and extended along the thoroughfare "Unter den Linden" and to the castle. The central scheme was a stretch of 400 yards in the vicinity of the late Emperor's palace, opposite the monument to Frederick the Great. The scheme included a number of well-proportioned obelisks, and the framing of the more important monuments of this thoroughfare by large painted canopies; on either side of the Guard's house, close to the Palace, there were pillars with many symbols of German military power, whilst nearer the castle there were similar pillars representing Germany's maritime interests. The principal feature opposite the castle was an obelisk 120 ft. high, with decorations symbolical of the German Empire and its various minor States. Throughout the thoroughfare the decoration of lamp-posts and flagstaffs was exceedingly carefully managed, and a very stately effect obtained.

American Patents. A NEW patent law comes into operation in the United States on January 1 next. Its object is to prevent delays and injustice to persons who are unable to take out patents because some other man has a patent in what may be termed a process of incubation. By the new Act the patenting abroad by other parties, or the publishing of the invention in any country more than two years before the

application for an American patent will be fatal to the latter. Again, the application on an invention patented abroad must be filed within seven months of the earliest foreign application. The time also for appealing against an order of an Examiner who refuses an application for a patent has been shortened from two years to one year. The Act should be studied by all those interested in patents, and persons who cannot get it readily may obtain a short *résumé* of its provisions in a single sheet issued by Messrs. Thompson & Co., patent agents, of London, Liverpool, and other towns.

Lord Penrhyn and his Workmen.

IT is to be regretted, though it is not surprising, that the interview last week between Lord Penrhyn and some representatives of his workmen has had no result. The actual point of disagreement appears to be the refusal of Lord Penrhyn to recognise a committee as a body representing the workmen in his quarries. This committee, the workmen contend, as we understand, is to be a permanent body, acting as a representative, and in some sense, governing body. That is to say, all complaints from the workmen to the employer are to be approved and to be put forward by it. We are unable to see why Lord Penrhyn objects to this body. If it has not the confidence of the men its composition will be changed, and its existence cannot prevent a workman who may be dissatisfied with it from putting forward his complaints individually. It is clear again that a workman who may have a genuine cause of complaint is much more likely to have his grievance redressed if it is put forward by a committee representing the great body of workmen than if he acts by himself. It is impossible to form an accurate opinion of the merits of the controversy without a close study of the notes of the interview. But from the report of the *Times* correspondent, who appears to have made himself acquainted with all that took place, it seems clear that each side is fighting for a principle, and that no compromise is likely to take place without the intervention of a disinterested party.

Municipal Theatre Competition, Kiew.

A FEW weeks back we had occasion to remark on an international competition for the design of a cathedral at Cronstadt, and to call attention to the advisability of having foreign representatives where there is a committee of assessors. We are glad to see, however, that there appears to have been a very fair distribution of premiums by an essentially Russian jury on the occasion of an international competition for the design of a new municipal theatre at Kiew. The first premium has been given to Professor Schroeter, of St. Petersburg, the second to a well-known German theatre specialist, Mr. H. Seeling. Mr. C. Sada, of Milan, has received the third premium, whilst the architect of the new Stockholm Opera House, Mr. Anderberg, has received the fourth. An extra premium was given to Mr. Weber, of Moscow. It almost seems, in fact, as if there were a kind of conscious intention to divide the premiums impartially among different nationalities. This is at all events better than the usual result of "international" competitions, in which the premiums are generally all given to architects belonging to the nation promoting the competition. The competition in question was for a theatre of 1,500 seats, costing 450,000 roubles. The jury comprised four Russian architects, two civil engineers, and three laymen of the Corporation.

An Archæological Discovery in France.

IN excavating for the foundations of a church at Yzeuse (Department of Allier), France, some blocks of stone have been discovered carved with bas-reliefs which are said to represent a "gigantomachia," and which are judged, from fragments of inscriptions on them, to have belonged to a Temple of Minerva. The stones have been "classed" by the "Commission des Monuments Historiques," and the excavations have been placed in charge of Père Lacroix, the well-known archæologist, in the hope of finding further remains.

A Pantheon at Berlin.

ON the occasion of the celebration of the 100th anniversary of the birthday of the Emperor William I. a motion has been put in the Imperial House of Parliament to erect a Pantheon as a memorial to the many soldiers who fell in the Franco-Prussian war. Though this motion found favour in the Upper House, it was considered advisable to postpone its discussion in the Lower House, owing to a strong opposition against the scheme. As we recorded last week, a Pantheon has long been considered a fitting national memorial to the late Emperor, but it is doubtful if the nation as a whole desires a monument in this form especially dedicated to the memory of the Franco-Prussian war.

The Timber Supply of the British Empire.

THIS was the title of a lecture delivered at the Imperial Institute on Monday, by Dr. W. Schlich, C.I.E., Professor of Forestry at the Royal Indian Engineering College, Coopers Hill, in which a mass of interesting and suggestive statistics was given relating to the imports and exports of timber into and from the several parts of the British Empire, &c. The lecture was evidently the result of much inquiry on the subject, and as the task of collecting reliable information is no light one, owing to the extent of the British Empire and for other reasons, Dr. Schlich is to be congratulated upon the completeness of his inquiry. From some tables prepared by the lecturer it appears that the net imports into the Empire for the period 1890-94 were of the value of 14,021,000*l.*, this being an increase in the six years of 2,293,000*l.* The United Kingdom took, of course, the bulk, and the timber imported into Great Britain and Ireland from all sources for the year 1894 was of the total value of 18,423,539*l.* The most interesting feature of the lecture was Dr. Schlich's opinion that at no distant date all the countries that now export timber in large quantities were likely, for several reasons, to require all the timber they can produce for their own requirements, while in some cases they would need to import it, as in some instances they do now, from any country that might be willing to supply. That being so, what will then be the position of the United Kingdom? And what steps can be taken for supplying the home market in view of this probable falling off in the foreign or colonial supply? The lecturer suggested that the State might do much good by affording assistance for the equipment of a proper forestry school, where scientific forestry could be taught. The Crown forests should also be managed on economical principles, so as to serve as models to private growers, while monetary advances, at low rates of interest, might be given for the purpose of planting surplus lands, and on certain conditions the Government might buy land and plant themselves. In the lecturer's opinion these and other steps might result in the production of a permanent supply of timber for these islands, as well as in giving work to a larger population, and also keeping in the country large sums of money which now go abroad. With some of the lecturer's conclusions we are inclined to disagree, but most of his statements appear to be well founded.

Surrey Commercial Docks, Rotherhithe.

WE understand that the new works are being carried out by Messrs. S. Pearson & Son, under Mr. J. Wolfe Barry's directions, Mr. W. Bennett being the resident engineer. The operations include an enlargement (845 ft. by 450 ft.) of the old Greenland Dock, and new locks for that dock and the Surrey Canal. The Commercial Docks have their origin in the "Howland Great Wet Dock," built *circa* 1660, covering about 10 acres, and named after the Howlands of Streatham. Elizabeth, daughter and co-heir of John Howland, brought the property in marriage to the second Duke of Bedford (1695), in whose house it continued until 1763, when it was purchased by John and William Wells. Being at that time the only wet dock on the river, it had long served for the Greenland whale vessels; enlarged in 1807, it was used for the Baltic trade. Two or three years later the old Commercial Docks Company was established by the Act 50 Geo. III., c. 207. The present company's premises consist, we learn, of nine docks, with timber ponds, having a water area of 187 acres, and 260 acres of wharfage. It seems that the first dock was made at the spot (close by Cuckold's Point) where it is supposed had been the entrance into the canal or trench cut by Canute to Lambeth, as a passage-way for his galleys when he besieged London. The canal's actual course has been investigated by various authorities, who are not quite in agreement. Maitland mentions the discovery, by the river, on excavating for the dock, of bundles of willow, hazel and other rods, laid endwise and fastened down with stakes.

Artistic Studies of Horses.

EVERY year, for five years back, the annual horse show at the Palais de l'Industrie, Paris, has been made the occasion of a contemporaneous exhibition, in the same building, of a series of pictures and drawings in which the horse is the principal subject. The exhibition this year is much better than its predecessors; amateur work has been kept out and the standard considerably raised, and there are some fine works among the collection. Among those that are worth special mention are a sketch by M. Checa; a large water colour by M. Georges Busson, representing the harnessing of a team; some studies by M. Gerôme, &c. There are also some good studies in equine sculpture.

Mr. Swan's Exhibition.

A VERY interesting exhibition of animal studies by Mr. John M. Swan is on view at the Fine Art Society's Gallery. The collection consists mainly of slight sketches and studies made from animals, as a preparation for finished pictures, but on that account they have a special interest, as being the immediate memorandum of the animal's attitude or movement made on the spot. Two in particular may be named as especially fine, the "Tigress Walking" (1), in which the idea of movement is admirably conveyed—one can almost see the undulation of body as the animal walks; and the "Study of a Lioness" (48) lying down, which is remarkable for the monumental grandeur of its lines.

THE ARCHITECTURAL ASSOCIATION:

EIGHTEENTH CENTURY WORK.

THE ordinary fortnightly meeting of this Association was held on the 19th inst., in the Meeting room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, Mr. W. H. Seth-Smith, Vice-President, in the chair.

The minutes of the last meeting having been read and confirmed, Mr. F. Bowles was elected a member.

Mr. Howley Sim, Junior Hon. Secretary, then proposed a vote of thanks to Mr. C. J. Phipps for conducting members of the Association over Her Majesty's Theatre, Haymarket, on the 6th inst.

The vote of thanks was cordially agreed to.

The Chairman said he wished to express his regret at the absence of their President, who was still in the East. He also announced the receipt of a letter from Mr. John Belcher in reference to the meeting that night.

In the course of his letter Mr. Belcher said that the subject for discussion that evening was one in which he was very much interested, and with his friend, Mr. Macartney, he was preparing for publication some typical examples of what they had termed "Later Renaissance Architecture in England." In fact, they had endeavoured to follow up the work so well done by Mr. Gotch with the early Renaissance, which he had made his special study. No doubt the study of good examples of each period of architecture was beneficial and helpful, as something could be learned from them of the principles which governed true design—seeking out the good and rejecting the bad, for abuses would be found in every period. The later Renaissance was as open to these as the picturesque efforts of the early Renaissance. Without particularising either, he (Mr. Belcher) was not without hope that by directing some attention to the works of the later Renaissance we might correct the extravagant and excessive use of ornament which had vitiated the public taste of late years, and so promote an increased regard for proportion and a greater simplicity and refinement of style.

Mr. Gotch then read the following paper on "Eighteenth Century Work":—

The eighteenth century saw the final development of that great movement in art which began in the early years of the sixteenth. When mankind had once made up its mind that the masterpieces of Italy were the only examples to be followed, nothing but time and determination were wanted to produce in all the lands of Europe a general sameness of appearance and treatment in every branch of art. In no art was copyism so contagious as in architecture, and in no art was it so injurious. For architecture is essentially a constructional art, a fact which the eighteenth did not realise, and a fact which wants no little reiteration at the present time when there seems to be a tendency to neglect construction for the more attractive accessory arts, and to desert the stately queen for her more lively handmaids. A constructional art, to be healthy and natural, must develop from within, and not from without.

Architecture in the eighteenth century was the Five Orders and nothing more. An old Roman, called Vitruvius, who had been dead seventeen hundred years, was Dictator, and those of his followers who differed from his precepts, although sometimes excused on account of their success, were admonished to be careful how they risked any deviation from the paths of perfection pointed out by him. Gothic architecture was despised and regarded as barbarous. It was not that the votaries of the art preferred a Classic dress to a Gothic: for them the buildings erected in the Middle Ages were not architecture at all. The "Gothick Order," as they called it, is described by one of them as "the Folly and very Ape of Architecture." Such an attitude of mind is hardly intelligible to us who recognise Gothic architecture as at once the most logical and daring form of construction that man has yet employed. It is hardly less difficult to understand how they can have failed to be impressed with the majestic solemnity of a great Gothic Cathedral; and yet they did fail—even such cultivated men as Evelyn and Addison. The phrase about the "very Ape of Architecture" occurs in a treatise by a lively Frenchman, M. Freart; and, considering the subject, a very entertaining treatise it is. But Evelyn's views were those of a sagacious, unimpassioned Englishman, and are worth quoting at some length as illustrating the standpoint from which the early eighteenth century looked at the subject. In treating of architecture, he says:—

"It is the Antient Greek and Roman Architecture only which is here Intended, as most entirely answering all those Perfections requir'd in a Faultless and Accomplish'd Building; such as for so many Ages were so Renowned and Reputed, by the Universal Suffrages of the Civiliz'd World, and would doubtless have still subsisted . . . had not the Goths, Vandals, and other Barbarous Nations Subverted and Demolish'd them . . . Introducing intheir stead, a certain Fantastical and Licentious manner of Building, which we have since call'd Modern (or Gothic rather) Congestions of Heavy, Dark, Melancholy and Monkish Piles, without any just Proportion, Use or Beauty, compar'd with the truly Antient: So as when we meet with the greatest Industry, and expensive Carving, full of Fret and lamentable Imagery; sparing neither of Pains nor Cost; a Judicious Spectator is rather Distracted and quite Confounded, than touch'd with that Admiration, which results from the true and just Symmetric, regular Proportion, Union and Disposition; Great and Noble manner, which those August and Glorious Fabrics of the Antients still Produce.

It was after the Irruption, and Swarms of those Truculent People from the North . . . . when instead of those Beautiful Orders . . . . they set up those Slender and Misquine Pillars, or rather bundles of Staves, and other incongruous Props, to support incumbent weights, and pondrous Arched Roofs, without Entablature; and tho' not without great Industry . . . . nor altogether Naked of Gaudy Sculpture, trite and busy Carvings; 'tis such as rather Gluts the Eye, than Gratifies and Pleases it with any reasonable Satisfaction: For Proof of this (without Travelling far abroad) I dare report my self to any Man of Judgment, and that has the least Taste of Order and Magnificence; If after he has look'd a while upon King Henry the VIIth's Chappel at Westminster; Gaz'd on its Sharp Angles, Jetties, Narrow Lights, lame Statues, Lace and other Cut-work and Crinkle Crankle; and shall then turn his Eyes on the Banqueting-House built at White-Hall by Inego Jones after the Antient manner; or on what his Majesties present Surveyor Sir Christopher Wren has lately advanc'd at St. Paul's . . . . and compare them judiciously without Partiality and Prejudice; and then Pronounce, which of the two Manners strikes the Understanding as well as the Eye with the more Majesty, and Solemn Greatness. . . . . In this sort have they, and their Followers ever since fill'd, not all Europe alone, but Asia and Africa besides, with Mountains of Stone, vast and Gygantick Buildings indeed; but not Worthy the name of Architecture: Witness . . . . what are yet standing at Westminster, Canterbury, Salisbury, Peterborow, Ely, Wells, Beverley, Lincoln, Gloucester, York, Durham, and most Cathedrals and Minsters."

Thus far Evelyn. That Addison had no clearer insight into the nature of architecture will be seen from the 415th *Spectator*, where he says:—

"Let any one reflect on the disposition of mind he finds in himself at his first entrance into the Pantheon at Rome, and how the imagination is filled with something great and amazing; and, at the same time, consider how little, in proportion, he is affected with the inside of a Gothic cathedral, though it be five times larger than the other; which can arise from nothing else but the greatness of the manner in the one and the meanness in the other."

The fact is that architecture to them was, as already said, the Five Orders and nothing more—to some of them less indeed, since they only admitted the claims of two out of the five grudgingly and of necessity. Architecture, in their opinion, dealt almost exclusively with the external appearance, and they dismiss in few sentences such considerations as the disposition of rooms. Planning to them meant first and foremost the arrangement of their building in regard to its appearance, not in regard to the functions it had to fulfil. Broadly speaking, a well-designed building is as much a product of evolution as natural scenery or the forms of plants and animals. Natural scenery is almost entirely governed by the geological formation of the district. Plants and animals have assumed their various forms chiefly as the result of the necessities of their growth, which, again, are dictated by the functions they have to fulfil. And so it is—or ought to be—with a building. Architecture is not only the art of building finely, it is the art of building finely in order to comply with certain specific conditions.

This notion of architecture was unthought of by the eighteenth century, brilliant though it was; and so the chief aim of its architects was to dazzle and impress the spectator, not to please and satisfy the indweller. Lord Chesterfield told General Wade, for whom the Earl of Burlington had designed an inconvenient though handsome house in Burlington-street, "if he could not live in it to his ease, he had better take a house over against it and look at it;" a piece of advice by which many a nobleman might have profited.

It has been observed that when people take to writing about art they have ceased to practise it to perfection. So long as it is, so to speak, spontaneous, its followers need no directions; it carries *them* along, they do not force *it*. But when its natural vitality is spent, and its followers are no longer borne unwittingly onwards, then spring up more or less gifted observers, who point out the ancient tracks and show how they may be continued; but unless among them be some who know what kind of force went to the making of the tracks, and can kindle the fire to produce the force, all the most accurate and beautiful drawings of those splendid vestigia will not enable one single one to be repeated.

Ever since the beginning of the sixteenth century—that is, for two hundred years before our period—Europe had been studying the footsteps of the Romans. For more than half that time England had thrown herself into the pursuit, and now the patient efforts of many writers were to be rewarded, and it was to be the aim of every generous patron and every architect of ability to make our English buildings as much like those of Italy as they could. Architectural design was to be a matter of rule and compass. What could be easier? The text-books gave the proportions, not only of the modern buildings of Italy—or rather the proportions of the Orders which adorned them—but also of some ancient ones upon which the sacred eye of Vitruvius himself must have rested.

Macaulay has observed that during the latter part of the seventeenth century, and the early part of the eighteenth the heroic couplet was so much in vogue, and was brought to such perfection by constant use that every poetaster could employ it with as much facility as Pope himself. So it was in architectural design. The rules were so well known that it required no genius to use them—nobody expected any skill in planning—and so the same dull propriety characterised every building that was put up. Just as in poetry it is not the polished form of the verses that marks the true poet, but the ideas contained in them; so in architecture it is not the correct marshalling of columns, and the "nice conduct" of entablatures that must be our criterion, but the manner in which the whole building satisfies and expresses the wants which it is supposed to supply. Judged by this standard, how many of the designs in Campbell's "Vitruvius Britannicus" would come within the category of true architecture? And yet those volumes contain nearly all the larger houses built in the first half of the eighteenth century. One of his designs Campbell introduces thus: "This design of my invention in the Theatrical stile is most humbly dedicated to Tobiah Jenkyn, Esq." The Theatrical style, he tells us "admits of more gaiety than is proper either for the Temple or Palatial style," and in that word *theatrical* lies the key to much of the designing of the period. It is all more or less theatrical, done to impress the beholder; just as in the second half of the century, the laying out of gardens and grounds was contrived with the aim of producing the effects found in the pictures of Claude Lorraine and other landscape painters, down even to the introduction of artificial ruins.

In describing the plan of his house in the theatrical style dedicated to Tobiah Jenkyn, Esq., Campbell dwells not on the convenience of arrangement, not on the cheerful aspect of the rooms or any special contrivance for the comfort of the inhabitants, or whatever goes to make a house a home, but on the proportions of his principal apartments. "Here," says he, "is the double and single cube, the hall being 27 ft. by 54 ft. Here is 18 ft. by 27 ft., which is the sesqui altera, and 21 ft. by 27 ft., the sequi tertia, and you pass gradually from the larger to the lesser:" all of which may have satisfied the wants and aspirations of Tobiah Jenkyn, Esq., but do

not compensate his descendants for the absence of those arrangements which make daily life tolerable.

The needs of daily life went but a little way to model the great houses of that time. Architectural grouping, in order to impress the beholder, often led to dividing the mansion into separate blocks, one for the family rooms and State apartments, one for the kitchens and servants, and one for the stables. The kitchen, therefore, would be hundreds of feet off the dining-room, a drawback against which Evelyn warned his readers, "or else," says he, "besides other inconveniences, perhaps some of the Dishes may straggle, by the way." Sometimes the servants' quarters were located in two detached blocks hundreds of feet apart, balancing the composition, of which the family rooms formed the centre, and joined to the latter by open colonades. How the service of the house could be carried on with the two halves of the staff separated from each other by a five or ten minutes' walk is not very clear; but of course the mansions were not built for the servants, but a little for the family itself, more for its grand guests, and most for the casual spectator who was to admire the lordly pile as he passed by.

The servants had to put up with what accommodation they could get. Their hall might be a vaulted underground room lighted only by areas, as at Buckland in Berkshire, and their bedroom windows might look out on to the back of the parapet. The butler might have to sleep in a room without any outside wall and no direct light and air. But in those days servants were merely servants, and could hardly expect to be exempt from suffering for architectural effect when their employers were content to suffer as well, though in less degree. And they must have suffered; for, wholly apart from considerations of bad service, the family were often located in a low basement with all the weight of the State apartments over their heads. Their rooms were not contrived to catch the morning sun, or to get a splendid view, or, indeed, for any particular purpose relating especially to them; but they were arranged to fill up the space beneath the great rooms of State, and if they were comfortable, it was more by good luck than good management.

The architects of those days were, in fact, more or less of amateurs, and the kind of architecture in demand was such as amateurs could supply. Pre-eminent among them—at any rate in social position—was the Earl of Burlington; and when we consider this fact for a moment, can we be surprised at the amount of unreal and theatrical design that was produced? Who could expect an Earl to concern himself with the niceties of household planning? No wonder that General Wade received that advice from Lord Chesterfield to take a house over against his new mansion and look at it. Yet all through the century Lord Burlington was looked up to as the greatest patron of art that England had ever produced, and especially of architecture. Horace Walpole extols his taste and his ability, he "had every quality of a genius and artist, except envy;" yet, withal, he cannot disguise from himself that Ripley, who was an architect by occupation (or, as they were still called in those days, a surveyor) "in the mechanic part, and in the disposition of apartments and conveniences, was superior to the Earl himself."

Pope, of whom Lord Burlington was a patron, satirizes Ripley more than once, but then Ripley did not belong to Pope's faction. Pope himself, in one of his epistles, points out a way in architecture which no one seems to have followed, not even the nobleman to whom the epistle was addressed. Writing to Lord Burlington, he says—

> You show us Rome was glorious, not profuse,
> And pompous buildings once were things of use.

And again:—

> Something there is more needful than Expense,
> And something previous ev'n to taste—'tis Sense:
> Good sense, which only is the gift of Heav'n,
> And tho' no science, fairly worth the seven.

Towards the end of the epistle he reverts to the same text:—

> 'Tis use alone that sanctifies Expense;
> And splendour borrows all her days from Sense.

It is rather amusing that a sermon founded on such an excellent text should contain so much that is at variance with it. Nor can we help smiling that the Earl's work should be supposed to embody the principles here laid down, when we remember poor General Wade's house, or the villa at Chiswick, beautiful no doubt in grouping and proportion, but of which Lord Hervey said, "The house was too small to inhabit, and too large to hang to one's watch." Walpole, who records this witticism, has some remarks on the house which are worth repeating. It is "a model of taste," he says, "though not without faults, some of which are occasioned by too strict adherence to rules and symmetry. Such are too many correspondent doors in spaces so contracted; chimnies between windows, and, which is worse, windows between chimnies; and vestibules, however beautiful, yet too little secured from the damps of this climate. . . . The ground apartment is rather a diminutive catacomb, than a library in a northern latitude." Then he adds a few sentences which throw some light on one of the motives that actuated the eighteenth century. "The larger court, dignified by picturesque cedars, and the classic scenery of the small court that unites the old and the new house, are more worth seeing than many fragments of ancient grandeur, which our travellers visit under all the dangers attendant on long voyages." There you have it—"the classic scenery," and the "fragments of ancient grandeur," which were to be rivalled by English villas.

It is from the opinions of men who lived in the eighteenth century that we can best gather the motives that underlay their actions, and, therefore, a further quotation from Walpole may be excused:—"It was in this reign" (of George II.) he says, "that architecture resumed all her rights. Noble publications of Palladio, Jones, and the antique, recalled her to true principles and correct taste; she found men of genius to execute her rules, and patrons to countenance their labours. She found more, and what Rome could not boast, men of the first rank who contributed to embellish their country by buildings of their own design in the purest style of antique composition." We have seen one of these men of the first rank, Lord Burlington, and what he did. Another was Lord Pembroke, and he is worth singling out because, according to Walpole, "no man had a purer taste in building than Earl Henry, of which he gave a few specimens, besides his work at Wilton." Now his work at the house at Wilton is about as dull as anything can be, and far behind the "theatric bridge" as Walpole calls it, which he threw over his river. This bridge is less objectionable than the other "theatric" work of the time inasmuch as it imposes no special inconvenience on any one, but whether a bridge of this kind is in harmony with English scenery is a debatable question.

Taste, of course, was the great requisite in that age. Lady Teazle endeavoured to acquire it along with other fashionable accomplishments, to her husband's great scorn—what had she, a country-bred girl, to do with elegant expenses and fashion before she married him? "For my part," replies the lady, "I should think you would like to have your wife thought a woman of taste." "Taste!" cries her husband. "Zounds, madam, you had no taste when you married me."

The extravagancies of the second quarter of the eighteenth century sprang from an indulgence in taste apart from considerations of propriety, and it was the often-mentioned Lord Burlington who led to them, partly by his own work and partly by his publication of the designs of Inigo Jones and Palladio's antiquities of Rome. But it only wants a comparison of Inigo Jones's work with that of Burlington and his successors, or a comparison of Wren's with theirs, to see how those two men were really architects, while the others were but amateurs dabbling in what they did not thoroughly understand, and into the details of which they scorned to enter.

But while we cannot but feel that in the true essentials of architecture they were sadly lacking, yet we must concede that they produced striking results. One of these fine palaces, when it was surrounded by its original gardens, must have been remarkably imposing. Take Blenheim, for instance. If we regard it as a home, we must be disappointed; but as the dwelling of a great noble, living in state and surrounded with all its attendant ceremony, receiving other great nobles with their retinues, and housing them in more magnificence than comfort, in these respects it has much to claim our commendation. There is much excuse for it in the fact that it was a gift from the nation to its greatest son; it had to be splendid at all costs—yet it did not meet universal appreciation even in those days, as witness the lines of Swift:—

> "'Tis very fine;
> But where d'ye sleep, or where d'ye dine?
> I find, by all you have been telling,
> It is a house, but not a dwelling."

Great as the progress in architecture has been within the last forty years, it has either been imitative or eclectic. We want it to be neither, for imitation architecture proclaims that we admit the superiority of our predecessors and eclecticism is but the pillaging of former architectures and rearranging the pieces; while what is wanted is either a new creation or a new and superior development, just as man is a superior development of the monkey, or even as the Apollo Belvedere or the Venus of Milo are superior developments of the average man and woman. I have insisted in these lectures on a much more complete and thorough knowledge of the art of construction than at present exists among us; because this is the foundation of our constructive art, and without a solid foundation no permanent monument will stand, but besides this an accurate knowledge of the strains on certain features gives the rough form they, or parts of them, must take; we saw in Byzantine that the abacus of columns had to be deeper and wider to support larger piers and greater weight; that the cap had sometimes to be cubic and only superficially carved to convey the weight to the shaft. The stone rings to connect the lengths of thin shafts together, in Gothic have been turned into ornamental features. Structural knowledge, however, is far from being all that we want. We know we want this knowledge, and we also know that it may be acquired, but we at least equally want, if we do not more greatly want, creative genius, either to create something new and original or to develop that which has gone before, as Nature does, or has done, in all her works. This power however, on the æsthetic side we know not how to attain; all we know is that it is the offspring of deep emotions, high aspirations, and intrepid resolves in the nation, acting on a certain love and skill in the artists. The successful resistance to the Persian invasion caused all the fine arts in Athens to blossom; and if you will consider the circumstances of the Saracen, Gothic, and Renaissance epochs, you will see that the arts were forced into blossom by important national achievements; and that the artists of the period only wanted this stimulus to make them achieve their brilliant successes. As individuals, artists can only contribute in a small degree to such intellectual upheavals. Their business, however, is to be ready for them. We may hope that in a short time every student will have a thorough acquaintance with construction and materials, and will have learned the art of moulding to suit the climate. We also hope that each student will strive to develop the shaping of forms so as to captivate the most refined taste; so that when the flood comes that will again float the bark of architecture, so long stranded, they may be ready to man her and steer her to new discoveries and new conquests; so that the twentieth century may be one of the most flourishing architectural epochs the world has yet seen. In that epoch I feel sure that those who were Royal Academy students will not be the least conspicuous.

But when these grandiose ideas were applied to the houses of ordinary noblemen, much as they may have been cherished at the time, those noblemen's descendants find it hard to live in their palaces, and hard to maintain them.

There is not time enough on the present occasion to dwell much on the gardens that surrounded these great houses, but they were an acknowledged part of the general design, and now that they have in most cases disappeared, the vast houses lacking their support seem more wanting in common sense than they otherwise would. Among the illustrations in Campbell's "Vitruvius Britannicus," which may be considered as the epitome of the period under discussion, there are not a few showing the lay-outs round the great houses, which were founded partly on Dutch and partly on French examples. It was, however, probably Versailles that set the example to our English nobility, though nothing was done here on so vast a scale. The Duke of Montagu, who was Ambassador at the French Court for a number of years at the end of the seventeenth century, occupied the first few years of the eighteenth, after his return, in "erecting his seat at Boughton, in Northamptonshire, after the pattern, and as his dimensions would allow, after the very model of Versailles." It must be admitted that Boughton House is a very plain copy or rather reminiscence of Versailles; at the same time, its garden and wildernesses were of unusual magnificence and size, and adorned with numerous statues and a considerable extent of canals and ornamental water, enlivened by *jets d'eau* quite in the manner of Versailles as recorded in prints.

The house itself, although of a rather plain and sombre cast, is interesting as an almost unaltered example of an eighteenth century mansion, simply though richly furnished. Its floors are polished, its walls panelled in large panels surrounded by a bold bolection moulding, the doors are lofty and set in thick walls, the chimney-pieces are simple and massive, and surround wide and deeply recessed open fireplaces. The ceilings are (many of them) by that rather dull painter, Verrio; still, they impart a large amount of character to the place. Here and there is a panelled room, or a fine chimney-piece of a hundred years before, showing that the house was not erected entirely new by the ducal ambassador. The walls are hung with ancient portraits and pictures, and the floors are full of ancient furniture. Through the heavy sashes one looks out on to the undulating park, and the long and lofty rows of trees which form part of the celebrated avenues. There are attics innumerable scattered in every direction, and approached by staircases where the handrail is mitred round the plain square newels, and twisted balusters join it to the swelling string. Through these attics you may go, and down a different staircase, to find yourself in a room that you thought was a furlong off on the other side of the house. Altogether an interesting place, and one that gives a good idea of the haphazard arrangement of a large eighteenth century house.

At any rate Boughton House was a home which could be inhabitated all the year round—even the state rooms; which is more than can be said of many of its contemporaries. Nevertheless, with all their drawbacks these palaces were stately. The plans look gorgeous on paper, and so do the sections showing the internal decoration. The effect of the places themselves is, perhaps, rather depressing on the ordinary person, the grandeur is a little too obvious—there is no such feeling of homeliness as in the many-panelled rooms of the early seventeenth century; but when all is said, the fact remains that the architects of the later time had a very definite aim in what they did, and they achieved it.

When we leave the mansions of the nobility, and come down to the houses of the squire or the well-to-do merchant, we find ourselves in a much pleasanter atmosphere. They have a quiet dignity about them which is decidedly restful and attractive, especially those of the first quarter of the century. In later times the portico idea became too prevalent, which consisted in affixing to the front of an otherwise plain house some variation of the columned front of an ancient temple. But the earlier houses, with wide corniced eaves, simple horizontal strings dividing the rows of sash windows, and combining with the quoins that emphasise the angles; these will no doubt long continue to form the model for houses of similar use and capacity. It is just a question whether this is quite the type that suits the present age; for our wants seem to grow always more complex, and to require a more elastic style than one depending for its effect on strict symmetry and unbroken horizontal lines.

If we cannot take a wholly sympathetic view of the purely architectural work of the eighteenth century—at any rate, in its more notable examples—neither can we forget that we are indebted to it for much that is suggestive in the work that embellished the architecture, especially in wood and iron. The ironwork of that period has never been equalled in England, and it lends an air of distinction not only to great houses like Drayton, in Northamptonshire, but to little suburban villas at Hampstead. The joiner's work of the time is full of suggestions. The sash-window alone was enough to revolutionise architectural treatment, and the far-reaching effects of a mitred moulding are impossible to follow. Through all the changes of two centuries these two facts have remained with us—sash windows and mitred mouldings—and there seems no immediate prospect of their being superseded. The work of the plasterer was not so admirable as that of the joiner. He had become too expert, and was able to perform prodigies of modelling and high relief, which finally undid him, and he and his art perished together.

If we are to seek inspiration from the work of the eighteenth century, we shall find it in two directions. First, in the grand schemes of house and garden combined, and in the general grandeur of treatment bestowed upon the great houses of the time. Not that we are to copy either blindly; but it is very desirable to realise how much the house and its surroundings depend upon each other; and equally desirable to learn how a grandeur of manner may be acquired. Secondly, in the sober and simple houses, where the plainness of the general appearance is sometimes unexpectedly broken by the quaint treatment of a door or a chimney, and where the joiner's work is full of homely lessons.

It is often from the vernacular architecture of the country that we can get the most useful hints: whereas it is the palatial architecture that gives its stamp to the period, and goes to furnish the text-books. The one is for show first, and use second; the other is for use first, and show second. The palatial architecture of the eighteenth century was surely given to us more as a warning than as an example; but it is worthy of attention, just as all phases of architecture are which have acquired any hold on public affection, and we are not likely, in view of our present methods of study, to fall into that attitude of mind towards any style which Evelyn exhibited towards Gothic. If we bear in mind that architecture must develoe from within, and not from without, we shall never again become the slaves of a foreign and a dead hand as our forefathers were in the eighteenth century, but we shall go forward, as we are indeed at the present time going forward, on different paths perhaps, and at different rates of speed—sometimes not without sharp divergence of opinion as to the propriety of particular steps—but always towards the same goal—the ennobling of our *Alma Mater*, the Mother-Art of the world.

Mr. J. M. Brydon, in proposing a vote of thanks to Mr. Gotch, said that the eighteenth century, in much of its literature, was a century of satire, and Mr. Gotch's paper had been a genial satire of the architects of that century. It was a question whether a satirist really appreciated what he was talking about, or whether he skimmed over the surface for the sake of turning an epigram or making a neat remark. Some of Mr. Gotch's remarks were excellent, but, if he might say so without offence, the lecturer had skimmed over the surface a little too much. To understand the meaning of what they had heard that evening—of the grandeur of the palaces and the homeliness of some middle-class houses—they must project themselves back into the society and life of the eighteenth century. It had been called the Augustan age in England, and in literature and art, and in arms to some extent, that was perfectly true; and the result of that was the seeking after magnificence which had to be expressed in the houses of the great, who lived in a state which our nobles would find very uncomfortable. The first thing that the nobles and princes of the land demanded was not a home but a palace. It was very difficult to make a palace homely in all its parts, though all their dwelling rooms were not on the basement, as might be inferred from Mr. Gotch's remarks; but still the main parts of the house, as at Blenheim and at Castle Howard and one or two others, were built for display and magnificence, for the maintenance of a great army of servants of all kinds, and all the paraphernalia that went to make up the *mise en scène*. Out of that grew the disposition of their plan, which was also the result of a desire for display and magnificence. Beside that characteristic of the eighteenth century, there was another, viz., the extraordinary commercial revival which took place, one of the results of which was the South Sea Bubble, and various other speculations by which people lost money; but people also made money, and there was created in the eighteenth century what we called the middle class. One of the first things desired by the successful merchant was a suitable house to live in, and consequently some of the smaller and more homely houses, some of which had been illustrated that evening, were built for the accommodation of successful commercial men. If there was one thing more than another that was characteristic of these middle-class houses, it was their homeliness and their comfort; they were eminently "livable" houses. When one found oneself inside such a house, the feeling was produced of a homely country gentleman's house, and that impression was stamped on the building inside and out. In the eighteenth century the buildings produced were often very beautiful compositions. In fact, they were models of proportion, both external and internal. The architects were not, in his opinion, tied to the five Orders—in point of fact, if the Orders were studied, it would be found that they were used in a very loose manner, without the least regard to the proportions of the ancients, except in the stately colonnade or portico of church or palace. In the exterior, particularly, of those houses, the rooms were models of proportion—their length and breadth and height satisfied the cultivated tastes of the people who lived in them. He thought that proportion was one of the first elements of architecture, and without it architecture would be of a very poor description. The same ideas of proportion were noticeable in exteriors. Even the palaces, illustrations of which had been exhibited that evening, possessed proportion and well-balanced parts. Sir Joshua Reynolds, no mean critic, had referred to Sir John Vanbrugh as a master of proportion. He knew exactly the necessary size and shapes of the different parts of the house in order to fit his dwellings to the site which was at his disposal. The laying out of the site was of very considerable importance, and, as they had seen that evening, the houses of the period were admirably adapted to their surroundings. He thought that might fairly be claimed to be the outcome of a long-continued effort to make the house in harmony with its site, and that that effort culminated, to a certain extent, in the elaborate gardens which were attached to the houses. Of course, to keep up one of these establishments and its surroundings a great deal of money was required, and he was afraid, without being disrespectful to any of the nobility, that some of these stately mansions were in the hands of people who were not rich enough to properly maintain them, though if the buildings suffered in consequence, that was no fault of their architects. The admirable woodwork, ironwork and plasterwork of the period were excellent studies in design, and also in manipulation—in workmanship. They had all the feeling of the artist workman. In his opinion this work had created a great English school, and to call such work Italian—work that had been the national style for 200 years—was straining the point a good deal. It was just as truly English as the Gothic architecture of the fourteenth century, which prevailed here, in contradistinction to the foreign Gothic of the same period. He somewhat objected to Mr. Gotch's use of the word "theatrical," especially in regard to the bridge at Wilton. If any one saw that bridge with the foliage, &c., about it on a summer day, he would feel that such a term was misapplied. The bridge had been copied by Wood, of Bath, but even the copy of the bridge had something of the English feeling and an absence of "theatrical" style. As to Lord Burlington, the age was one of letters, and no gentleman of culture was considered to have his education complete unless he knew something of art and, most of all, of architecture. He wished that modern education embraced the same subjects, for he felt that if it did the architecture of the country would be improved, because a demand would arise on the part of cultured clients for a higher order of art. The learned patron of architecture did not exist to-day, and the consequence was that there was no one to fashion and correct the public taste. In regard to the Villa at Chiswick, it was not a house to live in continually, but a place where its owner could spend a few days of quiet. It faced the river, and exactly expressed its purpose of a riverside house.

Mr. E. W. Mountford, in seconding the vote of thanks, said that Mr. Gotch's paper was one of the most interesting he had ever heard, and it showed that Mr. Gotch had read a great deal on the subject. He felt that they would all agree with Mr. Gotch rather than with Mr. Brydon in regard to eighteenth century houses. He did not profess to have such a knowledge of the period as Mr. Brydon possessed, but he might say that the houses of the period did not appeal to him, except from the outside. The palatial rooms were very grand to look at, but they must have been very uncomfortable to live in, and in some of the examples the extraordinary height of the rooms, even where there was no particular grandeur of architecture, must have made them very uncomfortable residences. He was thinking of a house at Easton-Neston, in Northamptonshire, which was attributed to Wren, like a good many houses he never saw. The family rooms were on the ground floor, but the smaller rooms, where the occupants generally lived, were made the same height as the others, the average height being about 18 ft. A room of that height did not suggest comfort. As to Blenheim, architects were told they ought to admire it, but he was bound to say that he did not admire it altogether. The whole atmosphere of the place was excessively aristocratic. He quite agreed with Mr. Brydon that the smaller houses of the period were very comfortable. It was his lot to spend his younger days in a house built in the early part of the eighteenth century, and a most comfortable house it was. The rooms were all panelled, and the doors had only two panels.

An air of quiet simplicity was a characteristic of most of the smaller houses of that period. They had one or two failings, one being the occasional mistake of the architects in keeping the roofs below the parapets. That was an architectural mistake which often occasioned much trouble in snowy and bad weather. They were very well planned, as a rule, and frequently were exceedingly beautiful, though towards the end of the century the deterioration began which culminated in this century.

Mr. H. Lovegrove said that the illustrations which accompanied Mr. Gotch's paper were admirable, but Mr. Gotch had not referred to small houses in streets at the end of the eighteenth century. One thing about them was the panelled walls, the joinery of which was of excellent description. What usually struck him was the smallness of the rooms of the houses. The front room on the ground floor, which was used as a dining or a drawing-room, usually had one portion of it taken up by a great chimney breast, and in the back-room a large portion was occupied by an angle fireplace, and the rooms were very lofty as well as very small. The execution of the plasterwork was very good. He was interested very much in thinking of their meeting that night to discuss such a subject, for some thirty years ago, in the days of the pupilage of some of them, the study of such a subject was altogether discouraged. They were told to read Parker and Rickman rather than to give attention to the subject. But one could not help thinking now that the interiors of the houses of the period suited the vernacular joinery and furniture better than modern Gothic.

Mr. H. W. Pratt said that they were indebted to Mr. Gotch for pointing out the advantages and disadvantages of the palatial and the more homely styles of the eighteenth century. One thing had struck him, and that was that the middle-class people did not attempt to ape the nobles in a palatial style in their residences, and that was a tendency which we did not follow, for nowadays there was an inclination to imitate the palatial style of building in our smaller residences. He thought we might take a lesson from the eighteenth century, and maintain that characteristic homeliness of treatment which, combined with taste and simplicity, was really very charming. In looking at the excellent illustrations which Mr. Gotch had brought before them that night he could not help thinking that some of the rather grand buildings which they had seen, however much they might be called "theatrical" in style, and, however much they might fail in the matter of convenience, really represented a wonderful mastery of plan and grouping, apart altogether from convenience. Some lessons might be learned from such examples in that respect, however much we might condemn them in others. The architects of the period combined something which should make us call them certainly more than amateur designers or architects. As Mr. Gotch had said, no one could imagine the effect which some of these enormous buildings and their lay outs would present, unless we used a balloon for the purpose of inspection; for the immense space occupied by the buildings made it impossible to realise the whole idea of the plan. It was external architecture really, and in studying the disposition of these buildings the modern architect must learn carefully what to follow and what to avoid.

Mr. Howley Sim, in supporting the vote of thanks, asked Mr. Gotch if, in the course of his researches, he had discovered the date of the first sash window. It seemed to him (the speaker) to mark a very important epoch in the history of architecture, for the whole of the style seems to have depended upon it. He thought that the character of the people of the time had been overlooked in previous studies of the eighteenth century architecture. They were not a people in a hurry, like ourselves, and they had plenty of time to think about and carry on their avocations. Absolute convenience in the matter of quick service, and in the disposition of their service rooms, was not considered of the same importance as it is now. The modern idea was convenience in the house first of all; in the eighteenth century it was only the second object sought after. Then, pleasure was gained by a house of tolerable convenience which called forth admiration. With regard to the study of the style, he did not think that it should be reproduced to any extent now, for it did not express our wants. As had been said, a great deal of beauty was to be found in the ironwork, plaster work, and joinery. As regards the joinery, half the charm of joinery disappeared when it was turned out by machine, instead of by hand, as it was to-day. But, of course, we could not give up machine-made joinery, as it would be absurd to go back to hand-worked mouldings, for instance. Had the eighteenth century had the opportunity, no doubt they would have used the machinery for the purpose. He would like to ask Mr. Gotch another question: What was the earliest example of mitred mouldings?

The Chairman, in putting the vote of thanks to the meeting, said that it was a curious enquiry as to the great difference of opinion in regard to the Gothic and Classic styles. The revolution of feeling in regard to the two styles in the two periods represented by Evelyn and Pugin respectively was extraordinary. He could account for it in no other way than Mr. Gotch had, viz., that both parties, but especially the eighteenth century party, had lost sight of the fact that architecture was a constructional art. The great fact for the architect of to-day to remember was that he was living in an age when common sense was required above all things. He did not know that anything had struck him more when at Vicenza than the steady deterioration noticeable in Palladio's work. It seemed to him, the speaker, that when an architect adopted a style such as the Roman, considered that to be perfection, and went on copying in that style, he deteriorated very rapidly. If Palladio's architecture had been founded on common sense principles, and such principles as guided the great *quattro cento* architects of Italy, a very different result would have been seen, for the man had great judgment and a great sense of proportion. He, the speaker, had been dealing with a very good example of an eighteenth century house, Hare Hall, near Romford. The house was not palatial, but was planned on the usual palatial style. The whole of the ground floor rooms were less than 8 ft. 6 in. high, and the first floor was devoted to the state apartments. The attics were the only bedrooms, and the windows in them were placed so high that one could only just look out. The house, which was built about 1763, was faced with Portland stone. On the other side of the road, in grounds of about the same size, was Gidea Hall, which was a perfect type of the early eighteenth-century house, built of a kind of brindle brick and dressings of a brighter red brick, with carved stone cornice. One defect it possessed was a flat roof. He had been recently speaking to a successful business man who had employed the same architect on several occasions, and for which architect he had a very high opinion. In the opinion of his business friend, that architect always succeeded in making the sides of a house as beautiful as the front. His buildings were excellently planned, and his houses were always comfortable. It struck him, the speaker, that common-sense results of that kind were what appealed to the public, and would do more to popularise architecture than anything else. Machinery, he thought, was likely to be of use in regard to the production of circular work, at almost the same price as straight work, and this was an important consideration. In some of the old houses of Lincoln's Inn-fields, and elsewhere in London, the staircases, plaster-work, ironwork, and chimney-pieces, were of very beautiful workmanship indeed.

The vote of thanks was then put to the meeting and carried unanimously.

Mr. Gotch, in reply, said that he feared he had not done justice to the eighteenth-century work as a whole, but he had been dealing with the text-book architecture of that period. When we came to examine the work of the eighteenth century, and especially the big work, defects and shortcomings were revealed, and, whatever might be said in favour of the grand treatment of architecture, he should still maintain that the groundwork, the bedrock on which architecture rested, was utility. It was no good to say "here is a beautiful house" which, no matter what the proportion or the design, when examined as a house, was a complete failure. In so far as it did not satisfy the purpose for which it was built, to that extent it was a failure. A thing to be a work of art must fulfil the purpose for which it was designed and for which it was wanted. If it were claimed that these large palaces were merely for show he would agree, but as dwellings they were failures, and as failures they were considered by many people who lived at the time of their erection. He could sit down and write another paper on eighteenth-century work which would contain very little but praise, and he would take as his theme the smaller houses of the time, where there was no great effort made, where people did not want state and grandeur, but where they wanted homely comfort. As a rule that was achieved, but a curious fact was that the names of the architects of these houses had vanished. In regard to Mr. Brydon's exception to the use of the word "theatrical," the word was Walpole's, who was a contemporary. He was afraid he could not give the date of the first sash window, or of the first mitred mouldings, but he thought the sash window made its appearance somewhere about Charles II.'s time (about 1675), and the mitred moulding preceded that by about fifty years. Mr. Gotch then drew attention to the various drawings which were exhibited, which included the collection of drawings made by Lord Burlington, from the Devonshire-Burlington collection in the Institute Library—a collection very little known. From some of these drawings it was perfectly evident that the convenience of disposition of the house was not considered at all. A collection of rooms, none of which were named, were grouped to look well on paper, and with the object of their making an harmonious exterior. As far as he could discover, that was as far as Burlington and his school devoted themselves to "scientific" planning.

The Chairman announced that the next meeting would be held on April 2, when Mr. T. G. Jackson, R.A., would read a paper on "Architecture in Relation to the Crafts."

The meeting then terminated.

ARCHITECTURAL ASSOCIATION SPRING VISITS:

BUILDING TRADES EXHIBITION.

THE fourth visit of the current session was paid to the Building Trades Exhibition at the Agricultural Hall, by the kind permission of Mr. H. Greville Montgomery, and a large number of members availed themselves of the opportunity of inspecting it.

The occasion was much appreciated by the members attending, as being a distinctly valuable opportunity for comparing the specialities of the various firms, which is practically only possible on some such occasion when they are collected together under one roof, and a vast amount of information could be obtained in a short time by a little careful study.

To students this applies with particular force, as it was possible to see models of a whole system of drainage, together with all the actual parts, and then compare it both as regards general principles and details with an adjacent arrangement; a form of study which may have been new to students even when the exhibits themselves were not novel. In the same way various patents and methods of fire-resisting construction of floors and partitions could be compared and the drawbacks and advantages duly noted; whilst any information as to sizes, strength, and cost could be easily obtained.

A hearty vote of thanks to Mr. Greville Montgomery terminated the Visit, which, though slightly differing from the usual proceeding of inspecting a building in progress, was amply justified by the exceedingly valuable and interesting information which was placed at the disposal of the members.

THE BUILDING TRADES EXHIBITION.

THE Lord Mayor, accompanied by the Lady Mayoress and the Sheriffs, opened the Building Trades Exhibition on Saturday last week, at the Agricultural Hall, Islington. The ceremony took place in the eastern gallery, and amongst those present were Sir Arthur Blomfield, A.R.A., Mr. George Frampton, A.R.A., The Technical Attaché to the German Embassy, Mr. Charles Barry, Mr. H. H. Collins, Major Leslie, Major Isaacs, Mr. Douglas Matthews, Mr. Lewis Angel, Mr. T. M. Rickman, Mr. E. Benedict, Mr. Thomas Blashill, Mr. J. Belcher, Mr. Shadbolt (Master of the Masons' Company), Professor Banister Fletcher and Mr. H. Greville Montgomery, the manager.

Professor Banister Fletcher, Chairman of the Consultative Council, in proposing a vote of thanks to the Lord Mayor for attending that day and opening the exhibition, said that the interest the Lord Mayor took in technical and handicraft education was not a recent growth. In explaining the origin of the handicraft competition which would commence at the exhibition that day, he said that such competitions were started five years ago experimentally. It was thought that open competition free to all would stimulate men to better work, that it would be of advantage that those not so advanced in practical knowledge should thus have

an opportunity of watching day by day the work done, and that both would be advantaged by seeing during their resting time the best materials, appliances, and inventions connected with the trades, and also the works of art lent for exhibit by the Science and Art Department, by the Corporation of London, by City Companies, and others. The medals and prizes included those given by the Worshipful Company of Carpenters and also that of the Joiners. The number of competitors was more than double that in the last competition, which itself had more than double that of its predecessor. As there was every prospect of the number continuing to increase now that the competitions were well established and had proved a success, and were appreciated by the men, monetary help would be needed to enable them to continue this valuable and growing work.

Sir A. Blomfield seconded the vote of thanks, and said that as an architect he was greatly interested in every matter connected with the advancement of technical education of the trades and crafts associated with the building trade.

The vote of thanks having been unanimously agreed to,

The Lord Mayor, in reply, said it was most desirable that people should have fit, proper, and commodious houses to live in, and above all that the sanitary arrangements therein should be complete. He thought there was little doubt that the decrease in the mortality of the human race was nearly as much attributable to the advances made in sanitation, and to the manner in which the regulations were carried out, as to the enormous strides of science, not only in therapeutics but in surgery and the whole art of healing. It was curious that, whereas nearly everything was but a mere reproduction of the inventions of the Egyptians, Greeks, and Romans, there had been designed in England a structure more remarkable than any known in ancient history. This was the Crystal Palace. When it was determined to hold the Great Exhibition a discussion arose as to how it should be housed. Joseph Paxton submitted a design of glass and iron, which was not only thoroughly original in idea, but, having been successfully carried out, was a monument to the imaginative genius of the building trade in Great Britain. The more such an exhibition as that at the Agricultural Hall could be fostered the more would people help to beautify the city of which they were so proud, and the more would they make their homes sanitary and comfortable.

Mr. Thomas Blashill proposed, and Mr. E. Benedict seconded, a vote of thanks to the Sheriffs, and, this being agreed to, Alderman Sheriff Ritchie replied.

The company then proceeded round the building, and inspected some of the exhibits.

A luncheon was given subsequently, Mr. H. Greville Montgomery presiding.

Professor Banister Fletcher, in proposing the toast of "The Chairman," said that Mr. Montgomery had very wisely rejected extraneous exhibits, and, in his opinion, the present exhibition was the best of the kind that had been held at the Agricultural Hall.

The Chairman, in response, said that they did not intend to hold a Building Trades Exhibition next year, but they hoped two years hence to hold another.

Mr. Arnold Statham then proposed "The Consultative Committee," coupled with the names of Mr. Charles Barry, and Mr. H. Phillips Fletcher, one of the hon. secretaries, both of whom replied.

Other toasts were "The Press," proposed by Mr. Henniker Heaton, M.P., and "The Chairman of the Executive Committee," proposed by Mr. H. H. Collins, and responded to by Professor B. Fletcher.

The Exhibition.

The exhibition is undoubtedly a better one than most of its predecessors, but it still has the defect of being rather a shop for the display of wares than an exhibition for illustrating progress and new ideas in building work and inventions, which is what it ought to be. We still find in various quarters the stands of the same firms in the same place as at last exhibition, and with little difference in their contents from what we saw two years ago. The interval is not long enough. If the exhibition is to be really what it ought to be, an illustration of progress and of new ideas, once in five years is quite as often as it is any use to hold it. There would then be some chance that each exhibition would be of real value. Added to that there ought to be a complete stoppage put on the touting and buttonholing nuisance, which is more prevalent than ever. It is impossible to look with attention at any exhibit without having a man pushing circulars into your hand and wanting to retail to you all the merits of his exhibit and what eminent architects have said about it, &c., &c. Just imagine such proceedings at, for instance, the Arts and Crafts Exhibition. If the Building Trades Exhibition is ever to take the place which it undoubtedly might take, this kind of procedure ought to be sternly stopped, as the management could certainly stop it if they tried. We may observe also that there is no improvement in regard to the system, or want of system, of arrangement and cataloguing. The catalogue defines exhibits as being in "Row A," "Row B," &c., but these "rows" are not lettered up anywhere in the building, nor is there any key plan attached to the catalogue. It is impossible to know where to find anything that one may see mentioned in the catalogue, or where to find the catalogue description of anything one sees, except by the tedious process of finding the exhibitor's name in the alphabetical index and then turning to the page. It would be perfectly possible to classify the exhibits and arrange the catalogue so that everything could be easily found; it is only a want of system that stands in the way.

In remarking on special exhibits, we may most suitably commence with the class of materials for building comprised under the head of

Stone, Brick, and Terra-cotta.

The exhibits of quarry productions are, for the most part, confined to surveyors' materials, and some well-known firms send small samples of road-metal, kerbs, chips, and the like. The exhibition is decidedly weak in stands of building stone, though stone as a whole is rather better represented than on the last occasion.

In regard to road-metal the Mountsorrel Granite Company and the Enderby and Stoney Stanton Granite Company represented the macadam of Leicestershire, there being several samples also of fine chippings and sand—the finer screenings from the "jaw-breakers" in the conversion of the stone by machinery; the same firms have a few specimens of granite kerbs, setts, and dressed granite. The Glyn Granite Company, Limited, of Glyn, Ruabon, have a small stand on which is shewn the peculiar road macadam from that part of North Wales. The material is remarkable as being employed instead of brass for machinery bearings. That particular class of stone is very rare in this country; it may be described as an amygdaloidal trachyte, and occurs as a broad dyke or vein running through Lower Palæozoic rocks. Darbishires, Limited, have a small exhibit of the celebrated Penmaenmawr stone consisting of setts, channels, macadam chippings, sand for concrete, flags, &c. It will be remembered that this material is not a granite, but an enstatite diorite, and occurs as an intrusive mass, near Conway; from its general appearance it might readily be mistaken for basalt. The old Radnor Company, Limited, of Kington, Herefordshire, has a stand displaying some small samples of channel stone, &c., whilst the Westbury Iron Company, Limited, of Coleford, near Bath, showed the capabilities of Carboniferous Limestone for road-metalling and asphalting purposes. Tough blue whinstone from Whitehead, near Belfast, broken for macadam, and chips is shown by Mr. C. W. Cooper. Mr. C. Sowton exhibits Cherbourg quartzite from the Montmartre and Le Motterie quarries; that from the former has a crushing strength of 2·908 kilogr. per square centimeter. The stone appeared to break clean, and may be compared with the Hartshill quartzite from the neighbourhood of Nuneaton.

In regard to building stones and marbles, the exhibit of the Barton Limestone Company, of Melsonby, *via* Darlington, was interesting as introducing a stone that has hitherto only been used chiefly for metallurgical purposes and macadam. Now it is polished as marble and is employed also as a general building and engineering stone. It reminds us somewhat of the well-known Hopton Wood stone, but can be readily distinguished by its different tints. It is a Carboniferous limestone composed almost entirely of the stems of crinoids, and the divers positions in which these lay give a characteristic pattern to the material. There are two principal kinds of the stone. One is very light in tint (a greyish yellow) and there is barely enough colour to throw the fossils in relief; the other is light grey also, but the crinoid stems, &c., are outlined in light blue. We much prefer the latter to the former for ornamental purposes. The use of the stone for rockeries and the like is well shown in this neat exhibit. The beautiful marbles of Derbyshire were represented by the effective display of Messrs. Twigg & Company, of Ashford. The dark-tinted crinoid comes out well in the chimney-pieces and balusters shown; whilst the black marble, so different to the majority of stones that are called by that name' are in reality black, jet black, and is one of the most remarkable stones in England. Thin sections of that also show that it is made up of small crinoid remains. The marbles from this locality are noted as not being highly coloured; the prevailing tints are grey, ranging from very light yellowish grey up to the black alluded to, though a little red staining may occasionally be seen. The different sized crinoids found in each variety of marble are characteristic, and give the local names to the materials. Messrs. David & Sant, Limited, of Coleford, Glos., have a good exhibit of Forest of Dean stone; the samples are uniform in tint and take a fine arris. The stone supplied is in three tints, viz., blue, grey, and red, and the firm has over fifty quarries. Ketton oolite is represented from the quarries of Messrs. T. C. Molesworth & Co., who state that its absorbing power is about 14 per cent., whilst the crushing weight is 1¼ tons per square inch. Mr. J. Rooke, of Weldon Grange, near Kettering, exhibited samples of Weldon stone, which is also an excellent material. Amongst other building stone exhibits were:—Messrs. B. Graham & Sons, of Huddersfield, moulded yellow sandstone from Crosland Moor quarries; Messrs. J. Riddiough & Son, of Bradford, samples from Bolton Wood quarries, Frizinghall; Messrs. Thos. Obank and Sons, Idle, near Bradford, York stone, ashlar and delphstone sawn and worked; Messrs. J. Farrar & Sons, Southowram, Halifax, hard blue stone from Bell Dean quarries, Thornton, &c.; Mr. Wm. Wilson, samples of paving materials from quarries in the neighbourhood of Kilsyth, Stirling. Messrs. Baird & Stevenson, of Carlton-place, Glasgow, show six 8-in. cubes of freestone from different parts of Scotland.

Slates are fairly well represented, but they are mostly of foreign origin. Those from America are exhibited by Messrs. Iles & Co., of Peckham, and Mr. C. H. Broodbank, of Martin's-lane, Cannon-street; the last-mentioned has also many samples of slate from Angers, France, as well as Irish paving and building stone. The house erected by the former firm, lined and roofed with American slate, was very effective, but we cannot say that any of the American material shown takes such fine, straight cleavage as do our best Welsh slates. In regard to tint, what are on view appear uniform and leave nothing to be desired in that respect, and we were particularly struck by the tea-green samples shown by Mr. Broodbank. The Abercwmeiddaw Slate Quarry Company, Limited, of Machynlleth, has a good exhibit of both slates and slabs. The "silver-grey" slates especially appear to be very sound, and to be practically free from pyrites.

Of artificial stones there are plenty. The Victoria Stone Company once more show the kind of work they are turning out, and enable us to compare their artificial ashlar and mouldings with those made of Portland and red and yellow Mansfield stones, as well as their application in various kinds of architectural work. The Sandstone Syndicate, of London, has erected a door, way and balustrade in white artificial sandstonet which do credit to the material. The Paten, Indurated Stone Company, Limited, of Millwall. has various samples of silicated concrete work The Imperial Stone Company, Limited, of Greenwich, make a goodly display of their various artificial productions, including a large stone arch, vases, slabs, drain-pipes, &c. The Marble (Moreau-Rae) Syndicate, Limited, of Lots-road, Chelsea, exhibit the capabilities of artificial marble for the purposes of decoration. Examples are shown of its application to staircases, dados, mantelpieces, table-tops, balustrading, columns, &c. The "marble" is white limestone, absorbent enough in the first place to take on varnish streaks and colours produced chemically, the whole being subsequently indurated. Although almost any desired tints may be induced to form, and the result is not bad, no one could mistake the material for true marble. "Petrifite," described in our columns a short time since, is one of the novelties of the exhibition. The Val de Travers Asphalte Paving Company, Limited, show several forms of paving blocks; and the applications of Callender's bitumen damp course were illustrated by models.

The brick and terra-cotta exhibits were not particularly novel, and there is very little to say about them, though many leading firms are exhibiting. Messrs. Candy, of Newton Abbot, have a large stand of stoneware, glazed and fire-bricks; Messrs. J. Grayson, Lowood, & Co.,

Limited, of Sheffield, have silica and ganister bricks; and a good show is made by the Worcester Fire Clay and Blue Brick Company, Limited, who have also sanitary clay goods of every description; the National Opalite Glazed Brick and Tile Syndicate, Limited, show the application of an artificial opal for veneering bricks, tiles, &c. Watson's patent Improved Roofing Tiles are on view, and show the effect on roofs produced by longitudinal grooves in tiles, the idea being to prevent rain-water from splashing up underneath or between the tiles when the latter are firmly secured. These tiles, we understand, are made from Broseley and Staffordshire clays. Amongst several other firms exhibiting bricks and terra-cotta are Mr. F. Jewson, of Earith, near St. Ives, Hunts, whose yellow bricks, wire cut, indicate a mean strength of 178·8 tons per square foot; Messrs. S. & E. Collier, of Grovelands Potteries, Reading, flower vases, seed pans, brackets, &c.; Messrs. Wood & Ivery, blue Staffordshire bricks; Mr. E. Holwill, Temple-chambers, glazed bricks and tiles; Mr. Mark Gentry, Hedingham, Essex, red hand-pressed and hand-made facings, rubbers, and moulded bricks; the Castle Fire-brick Company, Limited, of Northop, Flintshire; the United Kingdom Terra-cotta Fire and Sound Proof Brick Company, Limited; Mr. W. T. Chapman, terra-cotta works, Cleethorpes, Lincs; and Messrs. Joseph Cliff & Sons, of Wortley, Leeds, who have a fine display of glazed bricks, sinks, dove-tailed bricks, lavatory basins, &c.

Drainage and Sanitation.

In this section several important improvements are shown, and we are inclined to think that this department is one of the strongest in the exhibition.

The Albion Clay Company, Limited, have gone to considerable trouble and expense over their exhibit, which will, however, we think, amply repay them, in that visitors may see some of their important improvements at a glance. From an educational standpoint also, the complete system of drainage which the Albion Company have laid out is also to be commended. This system contains all the latest inventions of the company, and one can see how each is suited to its position and purpose. We may briefly enumerate some of them: The drain-pipes are those known as Sykes' patent joint pipes, made of granite stoneware. The joint is formed of a thick plastic composition, which sets in water, and it set between the socket end of one pipe and the spigot end of the adjoining one. The material is formed so as to screw one into the other, which gives the necessary play should any settlement take place. They are undoubtedly an improvement on an ordinary cement joint.

Sykes' patent sewer-gas interceptor consists of an intercepting trap placed in a chamber and hermetically sealed. Channel pipes are entirely avoided by the use of patent screw stoppers fitted to the pipes in such a way that they can be got at with ease by means of rods. By this system it is impossible for the chamber to fill with sewage and become a foul cesspool, the splashing of sewage and the insanitary conditions of an ordinary manhole which relies on an "air-tight" cover is thus avoided. The one weak point in an ordinary system of drainage is the manhole, and Sykes' patent interceptor seems to have rendered this state of things unnecessary. It is especially suitable for vaults or basements which are used in towns as offices.

Sykes' patent yard gulley is of good form and possesses important qualities of large grate area to take away storm water, small surface of water exposed, and cleansing arm fitted with a screw stopper of the same character as the pipes already described. They are also supplied with back and side inlets to receive rain water pipes.

A very complete exhibit is also made of inspection pipes and blocks. The inspection shoes for rain-water and soil pipes are excellent, and supply a much-needed want. The foot of the soil-pipe at its junction with the earthenware is a place which is liable to get clogged, and to remedy this and enable it to be easily accessible, a block is formed with flat bottom to rest on concrete, the upper part being fitted with removable screw stopper rendered air-tight by having a good fillet of Russian tallow in the socket before screwing up. An ordinary screw stopper inspection for insertion in the drain at different points is also shown. "Sykes's Improved Disconnecting Slipper" has been designed to meet the requirements of the Local Government Board to discharge sink and bath wastes and rain-water pipes 1 ft. 6 in. from the gulley in order to prevent noxious gases escaping through the pipes into the dwelling. It is an improvement on the ordinary gulley. We have no space to speak more fully of the exhibits of the Albion Fireclay Company except to remark generally of the care with which the exhibit is planned.

Messrs. George Jennings & Co. exhibit drain-pipes and also the well-known Stanford patent joints.

Mr. George Freeman exhibits a working model of Freeman & Shoesmith's system of close-sealed house-drainage, which, we are informed, has been adopted by the Brighton Corporation. It is an attempt to render manholes less offensive and dangerous by having no channel pipes in them. The pipes are whole bore, covered with cement, and, where necessary, an inspection eye formed by inserting a piece of glass in the pipe, covered with a cement joint. It does not appear so good a method as the screw-stopped mentioned above.

Messrs. Charles W. Outram & Co. exhibit a patent coupling for water-closet flush and soil-pipes, consisting of a split brass collar and the "Aquarius" wash-down closet, the chief feature of which is that the joint between the soil-pipe and closet is made on the drain side of the trap, and, being well below the trap level, this insures that it is left sound. The outlet of the earthenware trap is surrounded with an annular groove, or recess, into which the spigot of bend or junction is inserted. The joint itself is made by simply pouring in liquid cement until the groove is full. This form of closet adapts itself to any form of outlet, as 8 lb. lead bends with brass collars wiped on are supplied. It seems that the joint would be sound, but there is always an objection, in our opinion, to having a lead pipe within the house, as a nail hole or other abrasion readily admits sewer-gas.

Messrs. Dent & Hellyer have only one exhibit, the "Bi-syphon" four-gallon flush hospital pan and slop sink, which seems to effectively answer its purpose.

Messrs. Joseph Cliff & Sons exhibit some of their well-known porcelain baths and sinks, also white glazed channels and socket-jointed pipes.

Messrs. Broad & Co. show, amongst other things, a sink with tinned copper strainer of a somewhat novel form; a patent locking stopper for intercepting trap; and their impermeable Bristol ware pipes, which, it is maintained, are superior to tested stoneware pipes, being made of a closer description of clay.

Haywood & Co., Limited, show various sanitary pipes and connexions, especially their patent lock-joint formed by means of a rebate.

John Knowles & Co. have an important exhibit, and a rather important test of the "Vitrifine" stoneware pipes is published by them. It was made by W. H. Stanger, M.Inst.C.E., on three 6-in. pipes. Two of these burst at an internal hydraulic pressure of 250 lbs. per square inch, while the third stood the abnormally high pressure of 625 lbs. per square inch before it burst.

The "Loco" Drainage Apparatus Company, Limited, have some very useful sanitary fittings, such as baths, lavatories, &c. Of these the self-cleansing overflow pipes seem worthy of note. The system consists of a syphonic arrangement which is attached to the waste-pipe in such a way that when the water in a basin has reached a certain height it automatically empties itself by means of the waste-pipe. The foul accumulation of soapy matter within overflow-pipes is thus avoided, and the apparatus seems sufficiently simple to render it unlikely to get out of order. Other manufactures of the same company we have previously spoken of, especially the "Deflector" bends for the junction at the soil pipes, which seems well adapted to lead the sewage well into the horizontal drain.

The "Loco Cement Badger," for drawing through each drain pipe as laid, in order to ensure the removal of cement "crumbs" from the interior of newly laid drains, is useful. It is provided with a flexible shaft in order to enable it to be pulled round curves.

Messrs. Yates, Haywood & Co., show some of their well-known baths and fittings of excellent manufacture.

Messrs. G. & T. Haigh also exhibit some excellently finished glazed sinks.

The Sanitary Bath Co., Limited, have on view their patent steel clad copper baths, of the same price as ordinary galvanised iron. They have the advantage of requiring neither painting nor enamelling, no wood casings are used for the accumulation of dirt, and it is said—though we do not see that we can endorse the opinion—that it does not cool the water as iron or porcelain does. Surely earthenware is one of the best non-conducting materials for baths.

The baths are certainly preferable in every way to enamelled iron, and the combined bath and lavatory basin should be of use in small houses.

Messrs. Candy & Co. have an important stall of improvements in drain pipes for surface drainage, and we noticed especially their buff vitrified Olympia stable bricks for surface drainage, similar to the buff vitreous stable bricks used by the War Department for cavalry stables.

Messrs. T. Mitchell & Co. have an interesting collection of sanitary improvements. We note especially Cassel's patent wash-basin range for schools, reformatories, factories, public works, &c., where large numbers of people have to wash in a short space of time. The invention consists of a trough in the bottom of which are formed a number of small basins just large enough to admit of immersing the hands freely; a copper pipe passing below is connected to the bottom of each basin by a brass inlet. When, at washing time, the attendant turns on the water supply, it fills each basin and overflows all round the rim into the trough, whence it is discharged by a grated outlet to the drain.

Messrs. Mitchell's drain testing and cleaning appliances are worthy of inspection, as also Chisholm's patent pneumatic system as applied to lavatory basins. In these the water is sustained in the basin by an air-lock formed between two traps. If the water reaches a level within ½ in. of the basin top, it overcomes the air-lock and is immediately emptied, the discharge being syphonic in action; the trap and waste pipe are, therefore, well cleaned out every time the basin is used.

Moule's Patent Earth Closet Company, Limited, have an exhibit of their well-known dry-earth closets. No new improvements are to be noted, but the working models are excellent as a means of explaining the system which is shown as applied to the military depôts, schools, light-houses, and coastguard stations; a large number are also fitted to torpedo-boats, as it is found the most sanitary way of dealing with excreta on board ship.

Roberts' vertical rain-water separator, which is exhibited, has often been mentioned in our columns; it still seems to be less known than it should, as it is a most useful contrivance for ensuring a fairly clean rain water supply.

Messrs. Sutton & Company exhibit their patent stoneware channel blocks, which differ from channel pipes in being of thicker section and bedded solid on concrete. The blocks are interchangeable, and the rebated joints enable a solid construction to be effected. They are made in silicated stoneware, and are highly glazed with special salt-glazed enamel. The same firm also show Rayner's key joint and double socket pipe, of which there are two types, one with an inner composition and the other without. The pipes are self-centring, and the cement is inserted by means of "pour holes" on the upper side.

Mr. J. Kemp exhibits a working model of what he calls "an improved system of house drainage," in which the object seems to be to do without manholes, their place being supplied by means of pipes being brought to the surface, so that, in the words of the inventor, "the whole of drain can be rodded from water-closet pans, sink gullies, and to and through intercepting trap to main sewer in road from ground surface." We confess we see rather a retrogression than not in this "new and improved system." The long pipes cropping up at intervals along the drain to the ground surface cannot be properly ventilated, and although they are covered by an inspection eye which may or may not be air-tight, the principle is not one which recommends itself to us, and is not an advance in sanitary science. We doubt if any Sanitary Authority would pass it.

Messrs. Geo. Skey & Co. have a good exhibit of salt glazed drain pipes, traps, and interceptors.

Among gulley traps of a different type are those shown by Messrs. G. & F. Couzens. They are specially constructed to prevent the back flow of tidal or storm water by means of a movable floating copper ball which seals the pipe if a back flow of sewage occurs. In cases of dry weather where the water in the trap is liable to evaporate, the ball lowers itself to the bottom of the trap and is said to form a seal in this position, though we doubt whether sewer gas would be stopped in such a case. We think that the inventors have perhaps claimed too much in this particular, but it is a useful invention as regards the back flow of sewage.

Durran's "kallio" cistern is an improvement in household cisterns used for drinking water, possessed of an air-tight cover and arranged so that the water is discharged into it by sprinklers,

thus thoroughly covering the sides of the cistern each time. It is certainly an improvement on the ordinary cistern, to which dirt and dust have free access, and in cases where a constant supply is not to be obtained is almost necessary. With a constant supply, however, it is always best to take drinking water direct from the main.

Mr. A. T. Cooper exhibits a simple and effective vacuum pump for use in unstopping drains.

Windows.

Turning to improvements in windows, we think that the days of the ordinary double-hung sash should be numbered. Up to within five years ago it has withstood all efforts at reform, when the N.A.P. Window Company introduced their system for enabling the outside of the window to be cleaned without risking the life of the cleaner. The N.A.P. are represented at the Exhibition, and we have so lately described their system with illustrations,* that we need not refer to it again. The other systems are many of them founded on the N.A.P. principles, but vary in details.

Mason's reversible window consists of top and bottom sash, which do not slide up and down, but incline inwards for ventilation. Each sash is hung on patent centres, and it can be opened and fixed at any angle by means of a patent sash-fastening with long bar. It might be described as really a casement, with the advantage which a sash possesses for ventilation.

Mr. Laurance Seager shows his system for reversible windows, but he has an improvement by means of which the sashes are locked when closed or in any position, so that they may be left partly open for ventilation with safety, which is an improvement. This is effected by means of levers, placed at the sides of the windows, no sash-fastener being used.

Another good invention of the same character, but different in detail, is that known as "Jones's Fittings." These are easily fitted to ordinary sashes already erected. Part of one inside bead is hinged to allow the bottom sash to be taken out of frame, part of one parting bead is of brass or iron, attached to the pulley stile with pins; the cords are attached to the lower part of sash stiles, and act as centres to reverse the sashes. King Edward's Grammar School at Birmingham and other places have been recently fitted up with these, which appear simple and effective.

An ingenious invention for doing away with weights in sash windows is shown by Mr. W. Foster. In this a spring is attached to the sash, which works up and down on a rack, against which it presses sufficiently hard to hold it in any position.

Wippling's patent is another which we need not further describe.

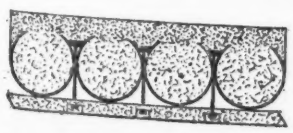
Among metal casements, the exhibit of George Wragge contains some excellent workmanship in steel, iron, and bronze casements. The designs for fittings—such as handles, &c., are above the average.

Miscellaneous.

There is not very much exhibited in the way of fireproof floors; Picking's interlocking twin-arch floor we believe we noticed in the last exhibition. Potter's fireproof floor, of which we give a small section, has a fireclay tubular

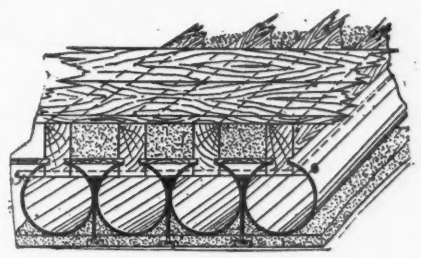
Potter's Fireproof Floor.

covering to the lower flange of the iron joist, the concrete is carried on corruguted iron bent to an arch form. This is a simple and light floor. We do not remember to have seen before the floor exhibited by the Pease's Tubular Construction Syndicate, of which we give a section as used for concrete and for boarded floors; the bearers con-



Pease's Tubular Floor, with concrete filling.

sist of galvanised troughs of nearly circular section. The same firm exhibit also a very workmanlike portable house, constructed in long panels with a slightly curved section (the convex outward), the panels are of wood-pulp board with a waterproof covering, clipped into an open-joint tube at the meeting edges; this is worth attention. In this connexion, or because it is close by, we may mention the exhibit of the Granite



Pease's Tubular Floor, carrying wooden floor.

Silicon Plaster Co., who show a remarkable hard and quick setting plaster carried on wire mesh.

In regard to damp-courses, one of the most interesting is that known as "Callender's Pure Bitumen Damp Course." It is a composition of Trinidad asphalte on a framework of jute. It is very pliable, and of course absolutely waterproof. It has been used extensively on the District Railway extension from the Mansion House to Aldgate, the new Waterloo and City Railway, the Tower Bridge, and is also being used as a lining to water reservoirs. It is practically jointless, and is used as an ordinary damp-course in buildings, and also as a covering to existing damp walls. A model of a brick wall standing in water is shown, and is a good illustration of the way in which the water soaked up by bricks is stopped by the damp-course. The material is also used as a covering for flat roofs. Messrs. Anderson & Son, Limited, exhibit some samples of a foundation felt or damp-course, which is made in slabs 2 ft. 8 in. long and of various thicknesses to suit the wall. Its price, 1½d. per square foot, should make it as cheap as any damp-course.

In regard to floor coverings, the Exhibition is comparatively weak, but a very good exhibit is the "Perfected" system of wood block flooring (Charteris & Longley Patents) by which each block is held to its neighbour by dovetail rebates and tongues formed all round the lower edges. It is simple, and therefore superior to the systems which depend on dowels, which may be left out by workmen. Some good combinations of different woods are shown in various patterns. Many of the New Zealand examples should come into use. The Cork Pavement Company show some examples of their pavement. It is made of cork and bitumen; its qualities are stated to be non-absorbent, noiseless, warm, and elastic. It has been used for drill halls and churches, and also for roadways, as at Liverpool-street Station. Lyte's Metallic Woven Tread Company show their patent, which we have before described, and which consists of lead run in between iron weaving, and fixed in squares of about 1¼ in. in a metallic backing for stair treads. It has been used at Sloane-square Station, among other places.

Wilson & Co.'s patent "safety" pavement lights are an improvement on the ordinary pavement lights, which are objectionable because of the projecting ironwork. In this case the iron divisions are filled in with lead, which is flush with the surface of the glass. Some roof-lights are also shown. In these the condensation water is led off by small gutters formed in the ironwork supporting the glass, and the glass being of arched form, this enables it to be accomplished easily.

There is a small collection only of locks, and the stand of Messrs. Joseph Kaye & Sons is, as usual, interesting in new inventions and adaptations. Some of the locks and fastenings for exit doors in theatres and the like show improvements, especially in meeting the requirements of the London County Council and other bodies for automatic opening, and the exhibit is worth inspection.

Machinery.

The machinery at this exhibition does not, as such, possess much interest. It consists mainly of brickmaking apparatus, two sets of exhibits of wood-working machinery, a few gas engines, and a portable steam-engine. Oil engines are conspicuous by their absence, which is to be regretted, as, for outlying jobs, we should have thought they would be found very useful in building operations.

Of the gas engines, that shown by A. Dougill & Co., Limited, of Leeds, struck us as worthy of notice. It is a 15 nominal h.p. "Otto" engine, giving 36 brake h.p., and is fitted with Green's self-starter, which appeared to work remarkably well. It is claimed that the governor is very sensitive, and suitable for electric light service. The absence of the peculiar noise made by the Crossley engines on the ignition stroke is very marked. The "Smithfield" gas engine, made by Thos. Green & Son, Limited, of Leeds and London, drives a small electric light installation with good results, and seems suitable for this purpose. The "Stockport" engine driving the exhibits of Mr. Sidney Butler does not call for any comment.

The one and only steam engine is sent by the well-known firm of Messrs. Ransome, Sims, & Jefferies, Limited, of Ipswich. It is a 20-h.p. portable, and is of the usual pattern supplied by these high-class makers.

There are two exhibits of electric fans, viz., the Blackman Ventilating Company, London; and Messrs. Matthews & Yates, Limited, London. The motor of the Blackman fan seems very cumbersome, and, being placed round the axis of the fan, of necessity considerably impairs the efficiency of the machine. In the Cyclone fan by Matthews & Yates, Limited, the motor is much smaller and less open to objection; but in each case there is room for improvement in detail both as regards appearance and design.

The brick-making plant shown by Mr. William Johnson and others is not of very general interest, and comprises wire-cutting machines, presses—both hand and driven—and also crushers. At Mr. Sidney Butler's stand may be seen wood-working machinery for planing, squaring up, chamfering, thicknessing, straight and circular moulding, sawing and morticing; a very handy little tool being shown for trying-up and planing.

Messrs. J. Sagar & Co., of Halifax, have machines on exhibit for similar purposes, together with an automatic plane-iron grinder, suitable for knives up to 26 in. long, which should be found a very useful adjunct to planing machines.

Electrical Work.

It is surprising that electrical firms have not taken more advantage of this exhibition, as the few firms who do exhibit have been well patronised. The two rival firms of Messrs. Matthews & Yates, and the Blackman Ventilating Company have attractive exhibits. The Blackman Company exhibit various new types of motors and fans. In their old type the armature spun on the circumference of the fan, and this type is still retained when a small slow speed fan is desired. The objection to this type according to their rivals, and it seems a real theoretical objection, is that the armature obstructs a larger volume of air than if it revolved nearer the axis of rotation. This objection, however, does not apply to their new type which is a thoroughly satisfactory motor and fan.

Messrs. Matthews & Yates have an instructive exhibit of cyclone "air propellers" and "blowers," actuated by electric motors. They are very efficient and economical, and are now getting well-known. Both firms are prepared to fix fans with alternate current motors in buildings connected with a supply of alternating current, and to guarantee their efficient action. They also exhibit alternating current motors. This is very satisfactory, as efficient single phase alternating current motors are thought by many electrical engineers to exist only in theory. We were disappointed not to see any of the ceiling fans so common in America, as we believe there is an opening for them in this country.

Messrs. Callender & Company's electrical exhibit will well repay study. The Callender-Webber conduit system was one of the earliest as it is one of the best methods used for laying down electric cables. The Chelsea Company used these conduits as early as October, 1888, and although many improvements in detail have been made since, yet the main principle remains the same. Models are also shown illustrating the Callender solid bitumen system, used amongst others by the Charing Cross Company. The methods of making connexion with a concentric main are well illustrated.

The samples of cable exhibited show what great advances have recently been made in their manufacture. Samples are shown of the three conductors of a three-wire supply station contained in one cable, and yet insulated from one another, and of triple concentric cables. We were particularly struck with a sample of "locked coil" armoured cable which is used by the Guildford Electric Light Company. It consisted of a concentric cable insulated with bituminous fibre, then sheathed with lead, and on this there is a solid bed of compounded yarn on which two wide ribbons of mild steel are wound spirally, and it is finally protected by jute yarn well impregnated with a preservative compound. A cable like this could be placed directly in the

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* See *Builder* for March 6, 1897, p. 230.

ground, as we understand has been done at Guildford, no skilled labour being necessary except for jointing, and hence there need be very little interruption of traffic, and it is at the same time more economical than the ordinary methods. It would be well if the company published details of the specific insulation of the vulcanised bitumen. To say that it is less than india-rubber conveys very little information, as, according to Mr. Preece, nearly every insulating material has a less specific insulation than india-rubber.

Heating and Ventilation.

In connexion with ventilation and heating there is very little to be seen in the exhibition, and less still that is new.

Messrs. Ewart & Sons have some new forms of ventilators, embracing, however, old principles, but showing good workmanship. The "Crown" ventilator is a very simple arrangement of louvres, and the "Victoria" ventilator is a revolving cowl in which the current is produced by the revolving blades, but abandoning the older form of Archimedean screw.

Mr. Thomas Potterton exhibits his arrangement of boilers for supplying hot water and also warming the house from the kitchen fire, but that, of course, is not new. He also shows some good safety valves for domestic boilers—the special value of which is the opportunity they offer of examining and testing the action of the valve by means of hollow spindle and cock.

Messrs. Matthews & Yates, Limited, show some fans, both of radial and centrifugal type, with electric motors combined. There is, of course, nothing particularly new in this, but the arrangement and work are fairly satisfactory. The same may also be said of the well-known Blackman Fans.

In stoves there is very little that is new. Messrs. Yates, Haywood, & Co. have an improvement on the now usually adopted type of kitchener with lifting fire, in which the lifting arrangement is independent of a rack, and works by a weighted quadrant.

A simple, cheap, and at the same time good, form of safety valve for kitchen boilers is exhibited by Messrs. Docking & Co., under the name of the "Croydon" safety valve, the essential feature of which is that a metal cone is so arranged as to burst at a desired pressure of from 50 to 65 lbs., and so relieve the tension on the boiler.

Artistic and Decorative.

Among the objects which are of artistic interest there is in the gallery a very interesting series of exhibits. The loan exhibition of architectural drawings is not very large, nor does it include many eminent names; but Mr. J. P. Seddon has a remarkable exhibit, including a number of exceedingly fine drawings and designs, some of which are well known to architects, also a large number of slight but free and clever water-colour sketches, a large fireplace and over-mantel in walnut wood with mosaic panels, &c., of original and effective design in an architectural sense; we do not think the walnut wood goes quite well with the mosaic. He shows also designs for stained glass and some bits of executed glass in Rust's material, which has the merit of presenting rich and varied tints of each colour, instead of a merely flat tint and monotonous colour. The advantage of treating glass in this way is that so much may be done with it without interfering with the surface by any laid-on pigment. There is also exhibited a remarkable cabinet carried out a good many years ago from Mr. Seddon's design, with figure subjects in the panels painted by Madox Brown, Rossetti, and other eminent painters. Mr. Seddon's exhibit also includes some of the decorative details for St. Peter's, Thanet, which was re-opened the other day after decoration from his designs and under his superintendence. Further down, the Carpenter's Company have lent a collection of the models and practical work done by their students. Then we find more architectural drawings (miscellaneous) and a collection of designs and models of the Tower Bridge and of buildings carried out for the Corporation of London—the Council Chamber of the Guildhall, the Guildhall School of Music, &c. South Kensington has lent a small but interesting selection of old work, including a remarkably fine carved wooden frieze and cornice from an eighteenth-century house; a fine lead cistern with raised floral ornament; and downstairs there is also, lent by the Museum, a very fine Classic doorway from a house in Great Ormond-street.

On the other side of the gallery is the most interesting artistic exhibit of all, that of the productions of the Della Robbia Ware Company, of Birkenhead, of which Mr. Harold Rathbone is the manager and was to a great extent the initiator. This is a most successful revival of an old artistic process, shown in a great many very good designs, and we would draw the attention of architects to the opportunities afforded them here for indestructible and washable sculpture and modelled decoration, with or without colour.

Among the trade exhibits there is naturally not much that comes under the head of artistic interest. The best exhibit in this sense is that of Mr. John White, whose grates and wooden mantels, designed by Mr. Lethaby and Mr. Quennell, have character and originality. Some of the mantels in the collection of Messrs. Bratt, Colbran & Co., who have a very large show at the top of the hall, are good in design and in the colour effect of the tiles combined with them. Among decorative tile work Messrs. Mensaque & Co. exhibit reproductions of Saracenic detail in wall tiles which are made at Granada of materials found in that neighbourhood, and they have succeeded in giving these a remarkably fine colour and subdued lustre, while we are assured that the colour is so far incorporated in the tiles that it is practically indestructible. Messrs. Pilkington have some one in their firm who has a feeling for delicacy of line and colour in tile design, or they have known where to go for designs; some of their exhibits are exceedingly good in this sense. The Anaglypta Company and Messrs. John Line & Sons exhibit a good class of wall decorations.

Among materials or processes which lend themselves to decorative work is that of the Mural Decorative Company, who exhibit decoration in what appears to be plaster, but which is a material lighter than plaster and apparently harder and less brittle. The United Asbestos Patent Company show specimens of incombustible material moulded into decorative panels and ceilings with the effect of rather coarse plaster work, as the material does not apparently allow of sharp definition; but for large spaces and for decorations on a large scale this would be no drawback—it might even be an advantage. The Opalite Company and the Opal Tile and Decorations Company are two different firms which exhibit what seems to be practically the same thing, viz.: thin glazed tile surfaces for affixing to walls, giving them the appearance of glazed brick. We should be rather afraid of these thin slabs coming off; it is true that in that case they can be replaced much more easily than a glazed brick. "Emdeca" appears to be an employment of zinc plaques for ceilings and walls in imitation of tiles; the method may be useful in getting a decorative surface, but why imitate tiles? The "Cameo Wood Working Company" treats wood under pressure with steel dies so as to produce the effect of a light-coloured carved wood in low relief inlaid into a darker ground; and though we fear we cannot agree that it produces an effect "quite equal to superior wood-carving," it has its merits. A good deal is done with it for decorative wooden covers for electric wires.

There is little wrought iron work; the general character of that exhibited by Mr. Geo. Wragge is good, and has the merit of being comparatively broad and simple in style. The exhibit by the Expanded Metal Company serves to show that this material combines light appearance with strength, for metal fencing, &c., in an unusual degree.

Illustrations.

ALBI CATHEDRAL.

THE foundations of the present cathedral of Albi, which is dedicated to St. Cecilia, were laid in 1282; and the main building was completed late in the fourteenth century. The whole, as it now stands, was finished in the last years of the fifteenth and the early part of the sixteenth century, when the rich and picturesque south porch, or baldachino, was erected together with the stone rood-loft and choir screen, the stalls, and the frescoes. This varied workmanship renders Albi particularly interesting; in the porch, screens, and rood-loft the influence of the Gothic of Northern France makes itself felt; the statuary and carving in wood and stone are Flemish; the frescoes are Italian. Moreover, the cathedral is not only a church, but a fortress. The great west tower is nothing but a donjon keep. The exterior buttresses rise from a glacis, vertically, in the shape of semicircular flanking towers; these towers are connected by an embattled machiolated parapet. The whole aspect of the cathedral, externally, is castellated; military, not ecclesiastical. In fact, the cathedral is only one member of a chain of military works which, including also the fortified palace of the Archbishop, extend to the ramparts which crown the escarpments that rise to the north from the Tarn. The fierce religious struggles which ended in the extermination of the Albigenses give the key to this striking exterior as well as to those of such churches as Les Stes. Maries and Esnandes. Internally, the cathedral is Gothic, but it is not the Gothic of England and Northern France. To begin with, the whole church is brick, except the window tracery. Then there are no aisles; simply one vast nave 60 ft. wide. Moreover, the buttresses are almost entirely internal; but inside the church, and it is no small merit of this system of construction, that the principal members on which the stability of the intersecting vaults depends are shielded from the weather. It is Gothic indeed; but it is no derivative of the basilicas of the early Christians of Rome, or of the Romanesque monsters of the eleventh and twelfth centuries. It is simply the basilica of Macentius or the Hermae of Caracalla translated into thirteenth century Gothic. These Roman-Gothic buildings of the South of France deserve much more attention than they have received; and it may well be that from study of these, rather than of the trite types of Northern Gothic, our modern churches might gain greatly in freshness and power. At any rate, they are far more suitable for congregational worship than the well-worn basilican plan. Great aisleless churches of this character may be seen also at Comminges, Lodive, Perpignan, Condom, Carcasonne, Gaillac, Montpezat, and Moissac.

The view given in this illustration is of a portion of the interior arcaded treatment between the buttresses, and close to the end of the choir screen, and is reproduced, with the permission of author and publisher, from a portfolio of large illustrations of French architecture issued by Herr Cornelius Gurlitt, under the title "Die Baukunst Frankreichs," and noticed in another column of this issue. The view shows what an amount of rich and delicate detail is combined with the solid and massive construction of Albi Cathedral.

ILLUSTRATIONS OF EIGHTEENTH CENTURY WORK.

THE illustrations on this plate are published in connexion with Mr. Gotch's paper read at the Architectural Association, and printed on another page, on Eighteenth Century work.

The view of Versailles is reduced from an old French print, and is of some interest in showing, though in a somewhat crude manner, the complete laying out of the grounds and buildings at the time they were constructed.

The photographs from Drayton show the picturesque entrance gates, with the very finely treated eagles on the piers, and the elegant entrance doorway from the inner court.

CHURCH OF ST. OSWALD.

INTERNAL EASTWARD VIEW.

THIS was a competitive design for a church on a flat and open site, to be built in brick with Monk's Park stone piers, mullions, and tracery, &c., and to seat, with supplementary chairs (not shown on plan), 790 people. The organ gallery to be placed over the morning chapel, and approached by a stair-turret at south-east angle.

The internal roof was to be a boarded and ribbed waggon vault. Sedan or other grey-green slates were to be used for external covering. The walls to be faced externally with red stock bricks.

The plan was arranged to make the most of the congregational area. The cost is estimated at about 8,000*l*.

E. P. WARREN.

THE CROFT, HIND HEAD:

THIS house was built a few years ago near the highest part of the Hind Head. The bricks and tiles were of the district, the former being the many-coloured clamp-burnt ones from the fields of Messrs. Gammon, of Petersfield, who built the house, and who also made the tiles, which are of a soft, rich colour. Drinking water has to be obtained from a deep well, the general supply for bath, kitchen boiler, &c., being rain water, pumped up. The architect was Mr. E. J. May, of London.

RESIDENTIAL FLATS, GREEN-STREET, W.

THIS building has been erected from the designs of Messrs. Henry S. Legg & Son, architects, of London, and consists of business premises on the ground floor and basement, entered from North

Audley-street, and residential flats over, approached from Green-street. Each suite has its servants' rooms on the top floor, with separate staircase. The building is faced with brown Portland stone and red bricks, and the roof covered with green Westmoreland slates. Messrs. Bywaters are the contractors.

DRAWINGS FOR THE ROYAL ACADEMY.

As before, we shall be glad to take charge of and deliver at the Royal Academy any drawings sent to us in time to be photographed before the day of delivery, with a view to subsequent publication in this journal and in the "*Builder* Album of Royal Academy architecture."

We cannot accept any drawings sent to this office later than Saturday morning March 27, before 12 noon.

Architects sending drawings are asked to give special attention to the following requirements of the Royal Academy ;—

1. All frames must be gilt.

2. Every drawing must have a label on the back, giving legibly the title and the artist's name and address.

3. Every drawing must have a similar label attached to the frame by a card so as to hang over in front.

4. Every drawing must be accompanied by a letter addressed to the Secretary of the Royal Academy, and signed by the artist, containing the artist's name and address, and the title or titles of the drawings sent. If more than one drawing is sent they must be distinguished by numbers, and the corresponding number must be repeated in the labels fixed to each drawing.

N.B.—We cannot undertake to supply or affix labels when omitted by the oversight of the sender.

ARCHITECTURAL SOCIETIES.

ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.—The eighth meeting for this session of the Discussion Section of the Architectural Association, took place at 56, Great Marlborough-street, W., on the 24th ult., when Mr. Henry Rose read a paper on "Dodges." Mr. Rose explained that he intended to draw attention to clever expedients in building, not to nefarious practices. The perfection of a "dodge" was its simplicity; a simple "dodge" was often far more effective than a "patent," the real utility of the latter being often very doubtful. Mr. Rose referred to "dodges" of nature and of primitive man, and also described many simple but highly useful ones in connection with building. In the discussion which followed many descriptions were given of "dodges" useful and "dodges" of doubtful utility. A hearty vote of thanks was accorded to Mr. Rose for his paper.—On the 10th inst. Mr. C. V. Johnson read a paper on "The Canons of Architectural Criticism," in which he drew attention to the necessity for criticism, and of rules by which criticism should be guided. Buildings were not to be judged by empirical rules of proportion nor on archæological grounds. Design should be based upon study of historical principles, not of historical form, and upon the requirements and ideals of the present time. The questions the critic had to ask were whether the plan was in perfect conformity with the requirements of the building; whether the parts were so disposed as to make the most of their artistic possibilities in the way of contrast of masses, of lines, of voids and solids, and of light and shade; whether the construction was truthfully expressed or whether features designed for other circumstances were imported and used in positions for which they were totally unfit, and in which they were unmeaning; whether the design was in keeping with the importance of the building; and finally, whether it was, as a whole, harmonious and in unison. The importance of proportion and of scale were touched upon, and a warning given against criticising details apart from, and forgetful of, the whole composition. Sublimity and dignity were praised and preferred to picturesqueness and grace. Finally, various constructive forms were discussed as to their artistic capabilities, and the author gave it as his opinion that no materials could be said to be inartistic, but that what was at fault was the lack of capacity of using the materials in an artistic manner by the artist himself.—The next and last meeting of the session will take place on April 28, at 7 p.m., at the same place, when Mr. Edward Thornton will read a paper on "Elementary School Architecture."

EDINBURGH ARCHITECTURAL ASSOCIATION.—The Edinburgh Architectural Association visited on the 13th inst. the Parish Church and Calder House, Mid-Calder, by permission of the Rev. J. D. Moir Porteous and Lord Torphichen, under the leadership of Mr. A. Hunter Crawford. The church at Mid-Calder is of early foundation, probably twelfth century, and the present building is of the sixteenth century, with modern additions. Attention having been drawn to the architectural features and the armorial devices, the party, after a thorough examination of the building, proceeded to Calder House. After Mr. Crawford had given an historical description of the house, which partly dates from the thirteenth century, and contains many very valuable paintings, the party was shown through the house by Lord Torphichen, who drew attention to various features of interest, and especially to the paintings in the drawing-room, formerly the large hall. The visit was brought to a close by a vote of thanks, proposed by Dr. Rowand Anderson, to Lord Torphichen and the Rev. J. D. Moir Porteous. St. Cuthbert's, East Calder, was also visited. This ruin is of twelfth century date, and the south wall and two gables are still partly standing.

ARCHITECTURAL SECTION, GLASGOW PHILOSOPHICAL SOCIETY.—Under the auspices of the Architectural Section of this Society, Mr. David Barclay, architect, delivered a lecture recently on "The Architectural Outlook." The lecturer said that former ages had left a legacy of great works in architecture which were possible under the conditions of civilisation then existing. But present conditions of civilisation, while spreading culture and comfort and art surroundings amongst the people, were not likely to demand, and, therefore, would not give opportunities for creating buildings which would rival those of the past. Facilities for studying the past and for art and science education were greater at the present than at any former period, and a high level of artistic ability was very general, and must tend to a higher average of good work. The highest level, however, would depend on genius—to which education alone did not prove an open Sesame. The conditions of the abused system of architectural competition had reached as low a level as possible, and showed some chance of mending, and in the meantime, and immediate future, there was an abundance of work in which he hoped all might have some share and do something for art that would leave a good impression of the times of the good Queen Victoria. At the close Mr. Barclay received a cordial vote of thanks. At the annual business meeting of the branch Mr. M'Gregor Chalmers was re-elected President; Messrs. M'Bean and Carlton, vice-presidents; Mr. William Howitt, treasurer; and Mr. Lindsay Miller, secretary.

GLASGOW SCHOOL OF ART.—The fourth lecture of the course on "Hellenic Architecture" was delivered last week by Mr. W. J. Anderson, the subject being "The Culmination in Attica," with special reference to two temples of Athene. The situation of Athens in the bi-polar system of Dorian and Ionian life led to a coalescence of the elements of each, a fact to be read not only in the adoption of each order, but in the details of almost any one example in Athens. In the first place two types were selected for analysis and contrast, the temple of Athene Polias, or the Parthenon, and the shrine of Athene Nika, better known as the temple of Wingless Victory. Of the former, its relation to the older temples, its plan, purpose, lighting, decoration, &c., according to recent investigations of Dr. Dörpfield, were explained, and Pausanias' description supplemented by various restorations of the interior, with its great image of gold and ivory. The architectural design evinced in the arrangement of the Panathenaic procession was noted, the subjects of the pediment sculptures studied with the aid of photographs and restorating, and the researches of Mr. Penrose into its details, optical refinements, and proportions were summarised.

DEVON AND EXETER ARCHITECTURAL SOCIETY.—In connexion with the Exeter Branch of the Devon and Exeter Architectural Society, a lecture was recently given at the Athenæum, Exeter, by Mr. Charles Cole, President of the Exeter Camera Club, on "Architectural Photography." There was a preliminary description of the camera, with hints upon its manipulation, especially with regard to the lines and planes of buildings. The lecturer advocated making photography at once a handmaid of architecture, as well as a companion, for it gave the architect immense facilities for studying the buildings of other countries, and delineated faithfully examples of both ancient and modern work. The old buildings should be kept in mind for those who followed, and surely this was legitimate work for the architect; but they should hand down pictures of how they lived, and what their streets looked like now, together with the dress of the people and street trades and sights. The use of the camera in cases of easement was shown. In regard to sketching and kindred matters, Mr. Cole did not think the camera should take the place of sketch books and pencil, but they might be used in conjunction. To sketch well was for architects a necessity. There was no doubt that some possessed the faculty more than others, and every architect amongst his other acquirements should have an intuitive love for, and a knowledge of, where to look for the beautiful. He claimed for photography, if used aright, and with an earnest desire to turn out good work, that the operator would naturally turn to picture-making, and therein was a great field of learning. The architect must possess and train the faculty of artistic sight. Pictures were to be found in everything, and amidst most unpromising surroundings. A large number of lantern slides were shown on the screen. A vote of thanks was proposed by the Vice-President (Mr. James Crocker) and seconded by Mr. C. J. Tait.

COMPETITIONS.

CENTRAL FIRE-ENGINE STATION, ABERDEEN.—On the recommendation of the Referee, Mr. Munce, Belfast, the first premium (50*l.*) in this local competition has been awarded to Mr. A. H. L. Mackinnon, architect, Union-street, and the second (25*l.*) to Mr. J. A. Ogg Allan, architect, View-terrace. The buildings in the design placed first will be of granite. The total cost, including accommodation for lighting and weights and measures departments, is estimated at 10,400*l.* The first premium merges in ordinary commission if Mr. Mackinnon is selected as architect of the station.

WORKHOUSE, SHOREHAM.—At a recent meeting of the Steyning Board of Guardians the question of employing an architect in respect of the proposed new workhouse at Kingston-by-Sea was discussed. A report of the committee was received in which nothing was recommended as to the appointment of an architect.—Mr. Woodman moved that architects in practice in the towns of Brighton or Hove be publicly invited to send competitive plans for the proposed new workhouse. Mr. Bates seconded. As an amendment Mr. Washington proposed that Messrs. Clayton & Black, of Brighton, be nominated for engagement. Mr. Grundy seconded. In the discussion which ensued Mr. Woodman withdrew his resolution, and Mr. Washington's proposition became the motion before the Board. As an amendment to this, Mr. Woodman proposed that the services of an expert be sought. On being put five only voted for the amendment, Mr. Washington's proposition being carried.

ENGINEERING SOCIETIES.

THE INSTITUTION OF JUNIOR ENGINEERS.—At the meeting of this Institution on the 12th inst., a paper on "The Protection of Buildings from Fire" was read by Mr. W. Rushworth Beckton, Chief Engineer of the Hotel Cecil. The author said that the all-important question of protection from fire, though essentially engineers' work, was too often left in the hands of less experienced persons without due regard to the peculiar circumstances of the case. On the other hand, when this experience was available, it was sometimes overruled by the architect or some higher authority who would not allow the decorations to be interfered with, the result being that the apparatus (if provided at all) was placed in some obscure position, at once losing its necessary characteristic of accessibility. Notice was given in the paper of first-aid appliances, of which the primary object was the confinement of a conflagration to the seat of outbreak, or extinguishing it in its first stages. In selecting the system to be employed, consideration should be given to the form and description of building—its content, the assistance available upon emergencies, and occasionally the nature and contents of surrounding properties. Irrespective of the circumstances attending the building, or the apparatus to be employed, water was generally accepted as the most useful agent for the extinction of fire. Its source and extent of supply were, therefore, questions of the highest importance. In all cases the supply should be duplicated by an ample storage, sufficiently elevated to give the required

head. In illustration of this method a diagram was exhibited, in which the fire main was shown connected to an elevated tank by a valve equal in area to the main, automatically closing by a float rising with the water level in the tank, and in like manner opening upon the pressure in the main being released by the opening of a hydrant (or sprinkler) at a time when the primary source of supply failed. In referring to the insufficient pressure obtainable upon upper floors, the author showed how this could be augmented by various apparatus. In buildings where hydraulic power was used, and the ordinary supply was at too low a pressure for fire purposes, the principle of the injector could be employed to increase it. In selecting positions for hydrants, &c., due regard should be paid to the escape of the operator in the event of his efforts being of no avail. As many buildings of most approved fireproof construction had been utterly demolished by the ravages of fire, it might be averred that no edifice was really fireproof, though the endeavours to achieve this ideal construction had resulted in increasing to a very great extent the facility of confining a conflagration to where it had broken out. Fireproof doors were usually made of iron, but these were found to buckle under severe heat, causing openings through which flame and sparks could pass. An improvement was found in building the doors in layers of wood battens firmly braced together at cross grains, and sheathed with thin tinned steel plates so interlocked as to allow for expansion—yet excluding the air from the wood. Doors of this description had stood very severe tests, showing only a very shallow charring of the timber.

ARCHÆOLOGICAL SOCIETIES.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The eighth meeting of the session of this Association was held on the 17th inst., Mr. C. H. Compton, V.P., in the chair. The hon. secretary announced that it had been decided to hold the Congress this year at Conway, upon the invitation of the Mayor and Corporation. Mrs. Collier read a paper on the church and painted glass at Bowness-on-Windermere, which edifice, she said, appeared not to have received as much notice from antiquaries as it deserved. The church is dedicated to St. Martin, but the actual date of its erection is not recorded. It is a very ancient structure, and some of the materials employed in its construction have been traced to Roman origin, and were probably brought from a Roman station which is known to have been established in the neighbourhood. Like most of the churches in the Lake district it is simple and rudimentary in construction, consisting (until the recent additions) of a nave and aisles, chancel, and a low, square, embattled tower at the west end. The east window is of late Perpendicular work without tracery or other enrichment, and the arches, capital and base of the columns, are equally devoid of all ornamentation, and until recently were covered with successive coats of whitewash. In the year 1864 some curious inscriptions and texts were accidentally discovered painted on the walls beneath the coats of whitewash. They consist of quotations from Robert Openshaw's catechism, and relate to the Sacraments of Baptism and the Lord's Supper, and belong to the time of James I. The chief feature of interest in the church is the painted glass in the east window, which was brought into prominent notice during the process of restoration in 1873. This glass is considered by competent authorities to date from about the year 1480, and to have been originally in the Priory of Cartmel, near Grange, whence it was removed to Bowness about 1528. A second paper was read by Mr. Patrick, hon. sec., in the absence of the author, Mr. H. Syer Cuming, upon "Mead and Mead Vessels." The author traced the origin of the beverage known as mead or metheglin, so much appreciated by the Britannic tribes and the Teutonic nations, from the hydromel of the Classic age. The vessels in which the metheglin was stored, and in which it was brought to table, were particularly described, and drawings illustrative of examples of mead cups and pots, several of which are in the author's collection, were exhibited. These vessels are reported to have been in early ages amongst the Celtic chieftains of gold and silver, and jewelled, as well as of glass, but those which have come down to our days are made of various woods wrought out of single blocks of beech, oak, elm, pine, walnut, willow, sycamore, and yew, sometimes ornamented with incised lines, and some bearing dates and initials.

SOME DIRECTORIES FOR 1897.

WE have received from Messrs. Knight & Co. (Fleet-street), a copy of the "Local Government Directory, Almanac and Guide for 1897," which is a neat, compact, and well-arranged edition of a very useful work. The volume includes the following lists:—Unions formed by the Poor Law Commissioners and the Poor Law Board, and Places under Local Acts; Town and Urban District Councils (including County Borough Councils); Rural District Councils, Parish Councils, Metropolitan Sanitary Authorities; School Boards, Burial Boards, &c. The information contained in this form, as to officers, populations, &c., appears to be very complete, and for purposes of reference by those concerned in local government matters the work is specially useful.

Sell's "Directory of Registered Telegraphic Addresses for 1897" (Henry Sell, Fleet-street), is the twelfth annual issue of a work which is compiled from official lists supplied by the authority of the Postmaster-General. More than 40,000 new registrations, alterations, &c., have been made since the last issue was printed, and in order to maintain the usefulness of the work the publisher issues supplements from time to time during the year. In addition to the various articles on British trade and foreign competition, there are included articles and figures for 1895 and 1896 relating to the following industries:—Iron and Steel, Coal, Petroleum, Textiles, Chemicals, &c. The directory contains other information of general interest.

"The Electrical Trades Directory and Handbook for 1897" (*The Electrician* Printing and Publishing Co., Limited, Salisbury-court, Fleet-street) is the fifteenth annual issue of a useful book of reference. The issue contains, for the first time, a large sheet table, giving technical particulars of the electric railways and tramways of the United Kingdom; regulations regarding the free supply of incandescent electric lamps; the new regulations of the London County Council for electric meter testing; tables relating to water power, British coal, dry saturated steam, hydraulic heads, feed water heating, rope gearing, &c.; the Buda-Pesth (1896) revision of the International Telegraph Tariffs, which come into effect on July 1 next; a sheet table, giving particulars of the electricity supply stations of the United Kingdom; a revised digest of the law of electric lighting; a digest of the law of electric power (for traction purposes), &c. The book contains other information of interest to the electrical industries. The directorial division consists of over 700 pages, containing a list of individuals and firms engaged in electrical science, engineering, and industry throughout the world.

Whitaker's "Titled Persons" for 1897 is a new work, designed as a companion to Whitaker's Almanac, and its get up is similar to that of the well-known almanac. The ordinary contents of a peerage, baronetage and knightage, including Dowager Ladies and Titled Issue, are given under a single alphabet; and to this is prefixed an extended list of the Royal Family, together with descriptive and explanatory information. An alphabetical list of country seats is a noticeable feature. The price of the work is half-a-crown.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of this Council was held on Tuesday, in the County Hall, Spring Gardens, Dr. Collins, Chairman, presiding.

Loan.—On the recommendation of the Finance Committee it was agreed to lend the Clerkenwell Vestry 2,900*l.* for wood-paving works.

Battersea Park-road.—On the recommendation of the Improvements Committee it was agreed that the estimate of 6,241*l.* 10s., submitted by the Finance Committee, be approved, and that the Council do contribute on the usual conditions three-fourths of the net cost of the widening of Battersea Park-road, between Bridge-road and Carlton-grove, as shown upon the plan forwarded by the Vestry of Battersea, such contribution not to exceed the sum of 6,241*l.* 10s.

Lincolns Inn Fields Railings.—The Parks and Open Spaces Committee brought up a report containing the following paragraph, the recommendation, after some discussion, being agreed to:—

"The boundary railing of Lincoln's Inn Fields garden is in urgent need of repair and painting, and the dwarf wall on which it is mounted is also much out of repair. In carrying out these works it is our intention that the present characteristics of the railing and wall shall be preserved as far as possible. We propose, however, for the convenience of the public, to widen to 7 ft. the existing gateways, which are only 3 ft. 6 in. in width. The length of the railing is about 2,100 ft., and the money necessary to cover the cost of its repair is provided in the estimates for the year. We recommend—'That the Council do approve the estimate submitted by the Finance Committee, and do authorise an expenditure of 600*l.* for the repair and painting of the boundary railing and repairing the kerb of the same at Lincoln's Inn Fields; that the work be executed without the intervention of a contractor, and that the estimate, plan, specification, &c., be referred to the Works Committee accordingly; but that in the event of that Committee not being satisfied as to the sufficiency of the estimate, the Parks Committee be authorised to invite tenders for the work.'"

Street Improvement (London) Bill.—The report of the Parliamentary Committee contained the following paragraph, the recommendation being agreed to:—

"On June 9, 1896, the Council, on the recommendation of the Improvements Committee, referred it to us to consider and report as to the desirability of embodying in a Bill in the next session of Parliament a clause to the effect that the Council should have henceforth the same compulsory powers of acquiring land for the purpose of improving streets in the County of London as the City Commissioners of Sewers and the district boards and vestries of London now have under the Act 57 Geo. III., cap. 29. We reported on the reference on January 26 last, and were instructed by the Council to prepare a Bill. We have accordingly had a Bill prepared which in our opinion meets the case, and we have ordered a copy to be sent to each member of the Council. We recommend that the Streets Improvements (London) Bill, as circulated, be approved, and that we be authorised to take the necessary steps for its introduction as a public Bill."

Common Shelters.—The Public Health Committee brought up the following report:—

"We have from time to time had under consideration the question whether common shelters which are not subject to the Common Lodging Houses Acts should be brought within the provisions of these Acts, and with a view to obtaining some information concerning the several shelters in London, Dr. Young was instructed to inspect premises in which poor people are temporarily provided with night accommodation in rooms which they occupy in common. In submitting Dr. Young's report, the medical officer points out that the premises inspected comprise numerous institutions which differ in their primary object as well as in the character of the accommodation they provide. Some aim especially at the reformation of the character of the inmates, providing them with a temporary home with a view to bringing them under wholesome influences; others have as their principal object the provision of a shelter for necessitous persons, although the moral improvement of the inmates is not lost sight of. In the former especially, efforts are made to assist the inmates in finding work, and in some work is provided for them on the premises. After stating the result of Dr. Young's inspection as regards cleanliness, air space and water-closet accommodation, the Medical Officer gives his conclusions as follows:—'While fully recognising, therefore, the value of the work which is done in connexion with these shelters, I think Dr. Young's report shows the necessity for subjecting those which are found to be inadequate to regulations which shall prevent the accommodation they provide falling below a certain minimum. The fact that they are not carried on for profit does not appear to me to be sufficient reason for exempting them from the requirement that their dormitories shall not be overcrowded, that the opportunities for cleanliness shall be adequate, and the water-closet accommodation of a proper kind. There would, however, be further advantage in the exercise of control over these places such as would ensure that they were fit for the purposes of a shelter before they are actually occupied. Premises are sometimes taken for this purpose which have been erected for an entirely different object, and knowledge is required to determine whether they can be properly adapted for use as shelters. This knowledge has sometimes been wanting, and hence unsatisfactory conditions are found to exist which might have been prevented. Probably the best course to adopt is an application to Parliament for the amendment of the definition of a common lodging-house, so as to bring common shelters within the provisions of the Common Lodging Houses Acts, notwithstanding that the houses are not used for the purposes of profit. An alternative method would be to empower sanitary authorities to regulate shelters much in the same manner as they can houses let in lodgings.' The Council on the 9th inst. authorised us to communicate with the Home Secretary with regard to the amendment of the law relating to common lodging-houses in London, and we are considering the question of shelters in this connexion. As the medical officer's report contains valuable information on this important question, we think it should be placed before the Council and the public, and we have therefore given instructions for copies to be sent to each member of the Council and placed on sale. We recommend that the course taken be approved."

The report was referred back, in order that a fuller report might be prepared.

New Theatre (Norris-street).—The Theatres and Music-halls Committee reported as follows, the recommendations being agreed to :—

"On June 30 last the Council approved of two drawings, dated May 14 and June 16, 1896, submitted by Mr. W. Emden, on behalf of Mr. Henry Dana, showing a site upon which it was proposed to erect a building to be known as the Regent Theatre. In our report on the subject we pointed out that the site of the theatre had a frontage of about 96 ft. 9 in. to Norris-street and of 98 ft. 6 in. to St. Alban's-place, Haymarket; that Norris-street was 28 ft. 6 in. in width, but would be increased to 30 ft. in front of the theatre; and, further, that St. Alban's-place was 41 ft. 2 in. in width. Mr. Phipps subsequently submitted drawings on behalf of Sir Henry Brownrigg, and our report thereon recommending their approval was referred back to us, in order that we might consult the solicitor as to the legal position of the Council in the matter. We have found it necessary, therefore, to reconsider the whole question of the site, and as instructed we have obtained the opinion of the solicitor as to whether it does or does not comply with the Council's regulations. He advises us that in his opinion the site does not comply with the regulations as the thoroughfares on which its boundaries abut are not thoroughfares 40 ft. and 30 ft. wide as required by such regulations. Having regard to the opinion of the solicitor we now recommend :—

'(*a*) That the resolution of the Council of June 30, 1896, approving the two drawings, dated May 14 and June 16, 1896, be rescinded.

(*b*) That the Clerk be instructed to forward to Mr. Phipps a copy of the resolution rescinding the approval of the drawings, and to intimate that the Council will be unable to grant a certificate under the Metropolis Management and Building Acts Amendment Act, 1878, for a theatre on the site in question.'"

The Works Committee.—In answer to a question by Mr. Cohen, Mr. Hoare, Chairman of the Works Committee, said that the Works Department had refused sixty-one works, the total estimate for which was 142,000*l.* Mr. Cohen subsequently asked for details, and the Chairman of the Committee promised to give the matter his attention.

The Council, having transacted other business, adjourned at twenty minutes to eight o'clock.

THE INSTITUTE OF BUILDERS.

THE thirteenth annual general meeting of the Institute of Builders (Incorporated) was held at the offices, 31, Bedford-street, Strand, W.C., on the 23rd inst., Mr. Geo. Haward Trollope, the President, in the chair.

The following report, on the motion of the Chairman, was received and adopted :—

"In presenting their thirteenth annual report the Council have to record, with great regret, the death of Mr. W. H. Cowlin, of Bristol.

In view of the course taken by the Royal Institute of British Architects in issuing, on their own account, an agreement and conditions for building contracts in a form which the Council of this Institute were unable to approve, the Council have thought it desirable, in the interests of the members of this Institute and the trade generally, to print a form of agreement to be used with the conditions of contract agreed between the Royal Institute of British Architects and the Builders' Society in 1870, which, as the members are aware, have been in constant use ever since. The fresh prints of these conditions have, however, been corrected as was necessary to bring them up to date in the references to Acts of Parliament and authorities passed or constituted since they were first agreed.

The Council have during the past year been in correspondence with the Surveyors' Institution, with reference to the growing practice among quantity surveyors not to take out in their quantities the labour upon stone-work; but they regret to say that the Council of the Institution do not see their way to taking any action in the matter. They, however, consider it a practice to be deprecated, and state that their examinations include the preparation of quantities in which the whole of the labour in stone-work has to be given in detail, and they think this to be a sufficient indication of their views on the subject.

The Council during the past year were called upon by her Majesty's Office of Works to nominate a quantity surveyor, to act with the surveyor appointed by that Department in preparing the bills of quantities for a new post-office for the Western Central District of London.

The Council desire to express their obligations to the various committees.

The audited accounts of the Institute and the Benevolent Fund will, as usual, be submitted to the meeting.

In accordance with the Articles of Association the President, Mr. Geo. Haward Trollope; one of the Vice-Presidents, Mr. Joseph Randall; the treasurer, Mr. George Plucknett; the auditors, Mr. Ernest S. Rider and Mr. J. W. Duffield; and four members of the Council, Messrs. George Burt, G. N. Watts, S. Wheeler, and Geo. Williams retire, but are eligible for re-election; and one other vacancy on the Council remains to be filled by the election of some member at the general meeting. It will also be necessary to elect two auditors, as Mr. Duffield does not seek re-election."

The Secretary (Mr. R. S. Henshaw) then read the audited accounts for the past year, which were adopted. A vote of thanks was tendered to Mr. Trollope for his services as President, and Mr. William Shepherd was elected President for the year 1897-8. Mr. Joseph Randall was re-elected a Vice-President and Mr. George Plucknett treasurer, the following members being elected on the Council, Messrs. George Burt, Thomas Hall, George Kett, Geo. Nelson Watts, Samuel Wheeler and George Williams. Mr. Ernest S. Rider and Mr. Fred Dove, jun., were elected auditors for the ensuing year.

PRACTICAL PLUMBERS' WORK.

THE last of the present course of lectures on matters connected with building at Carpenters' Hall, was delivered on Wednesday by Mr. J. Wright Clarke, whose subject was "Practical Plumbers' Work." The chair was occupied by Alderman Sir Stuart Knill.

The lecturer said that the plumber of to-day was not called upon to do artistic lead work, though, if architects would design such work, there would be found plumbers capable of executing it. Some excellent lead-work was occasionally carried out at the present time, but, unfortunately, there was very little call for artistic work. His lecture would be confined to practical plumbing as applied to buildings, and sanitary plumbing would not be dealt with. With the aid of a large number of diagrams, of models, and specimens of lead pipes, the lecturer then referred in detail to the proper and improper methods of dealing with roofs, soil pipes, joints, sinks, closets, &c., his remarks applying to such matters as covering the ridge roll of roofs, flashings, drips (which should never be less than 2 in. deep, 2½ in. being better), lead flats, secret gutters, soakers, hips to roofs, covering roofs, gutters, dormers, trap doors, and skylights, &c. In referring to square soil pipes, he remarked that they were sometimes preferred for the sake of appearances, but round pipes were better, since they kept cleaner than square pipes.

The Chairman, in proposing a vote of thanks to the lecturer, said that it was quite evident that some of the past work was of a most artistic character. The remains of the Romans showed that there were some beautiful bits of plumbing to be found underground. Plumbers' work of the time of the Middle Ages showed beautiful ornamentation. As the lecturer had remarked, plumbers depended now upon the architects for their designs, but in olden times that was not the case. The plumber then, like all other workmen, was an artist, and undertook his own work, and aimed at carrying out his work in the most beautiful manner he could. Whatever a man's work might be, he ought to strive to become an artist in doing that work. If that spirit animated plumbers and others to-day, lead work would be executed as it was in the times he had referred to. In conclusion, he mentioned a course of lectures arranged by the Carpenters' Company on Carpentry and Joinery, to be delivered on the Wednesdays from April 28 to May 26.

Books.

Die Baukunst Frankreichs. By CORNELIUS GURLITT. Dresden: J. Bleyl. London: B. T. Batsford.

THIS is so far simply a portfolio of illustrations by the Lichtdrück process, issued under the editorship of Herr Gurlitt; whether any letterpress is to follow at a later date does not appear. It contains however very finely executed illustrations of ancient buildings some of which have not yet been rendered commonplace by frequent illustration. Among them are the Porte Noire at Besançon, among Renaissance remains, and the remarkable gate of the Capitole at Toulouse, with its curious and characteristic sculpture; a fine house in the Rue des Forges at Dijon, enriched with sculptured wreaths and swags remarkable for their boldness and high relief; and the Hôtel de Monnaies at Avignon, now the Conservatoire of Music.

Among the illustrations of Gothic work there is a fine and very clear photograph of the interior of Angoulême Cathedral, and another of part of the interior of Albi, a reproduction of which appears among our plates this week. Mr. Batsford is the agent for the publication in England.

Sanitary House Drainage; its Principles and Practice. By T. E. COLEMAN, Surveyor Royal Engineer Civil Staff, M.San.I. London: E. & F. N. Spon. 1896. Pp. xx. and 186, and 97 illustrations.

THIS little book can be recommended for its lucidity, terseness, and general correctness. It covers practically the whole field of ordinary house-drainage and what are generally termed "sanitary fittings," but the information on some points is somewhat meagre; for example, the only washing-up sinks which are mentioned are of stoneware. Here and there we notice the tendency, not uncommon in books on sanitation, to lay down rules which cannot possibly be universally applied and which are more exacting than need be; if every drain-ventilating shaft must be at "a minimum horizontal distance of 18 ft. from any chimney," then farewell shafts or chimneys, and farewell Mr. Coleman's frontispiece. Among the "general principles" of drainage, it would be well to include another to the effect that the drains must have a sufficient inclination in the right direction, otherwise "the degree of perfection in which these general principles are carried out will [*not*] be the measure of the sanitary efficacy of the whole." Soil-pipes *less* than 4 in. in diameter are now often used. These, however, are details. The book is well illustrated, well printed, and contains a complete index, and is worth buying and studying.

Lockwood's Builders', Architects', Contractors', and Engineers' Price-Book for 1897." Edited by FRANCIS T. W. MILLER, A.R.I.B.A. London: Crosby, Lockwood, & Son. Pp. 516, 200, and clvii.

THIS is undoubtedly the most ably and carefully edited of the three price-books for 1897. In almost every respect the book is up-to-date; it is not without its shortcomings (*e.g.*, no prices are given of copper boilers, copper cylinders, concealed roof-ventilators), but the shortcomings are certainly few in number—unless we take the editor and publisher seriously when they term it an "engineers'" price-book; then, indeed, we should have to draw up a most formidable list of omissions. The "Legal Notes and Memoranda" are clear, concise, and useful, and the supplement of 200 pages on the London Building Act (1894), and other enactments and by-laws in force in London, with "an Introduction, Notes, Cases, and Index," by Alexander J. David, B.A., Barrister-at-Law, will be of service to Metropolitan architects and builders. We can recommend the book, but it would be all the more trustworthy if many of the prices were reduced considerably; many of them are 50 per cent. higher than the ordinary prices which builders accept for good work. This fault, however, is common to all the price books.

A Practical Manual of Building Societies, with Tables. By ARTHUR FAWCETT, Accountant. London: W. B. Whittingham, Ltd. 1896.

THIS work is one which will be useful to officers of building societies. It deals with these bodies, to quote from the preface, "from an arithmetical and statistical point of view." It is concerned not with law but with figures. Thus, pages 62-67 are filled with a repayment table; pages 68-99 are occupied with a revenue account table. The ordinary subscriber to a building society cannot be expected to trouble himself with such details as these, but those who are responsible for the conduct of these societies are bound to understand all the details necessary for efficient management, and it is to this class that this work properly appeals.

Rating: Principles, Practice, Procedure. By P. MICHAEL FARADAY, Rating Surveyor. The Legal Matter Revised by STANLEY A. LATHAM, LL.B., Barrister. London: *Estates Gazette* Office. 1896.

IT may be doubted whether there is any need for a new book on the subject of rating. If there is, it arises chiefly from the size to which standard works on this subject have grown, and from the want of material which is noticeable in mere handbooks. The work before us has distinctly a merit in this respect; it is fairly full, it states principles, and gives legal references; but it is eminently a book which can well be used by a person who is not a lawyer. There is nothing

more noticeable in regard to this branch of law than the way in which judges have had to decide economic and social questions which are, in truth, fully as capable of being decided by a layman as by a lawyer. Thus, by 6 & 7 Vict., c. 36, literary societies are exempt from being rated. The question then arises, What is a literary society? A judge is no better able to decide this than any other well-educated man. Mr. Faraday treats of this point in his chapter on "Exemptions," and any one who reads it can in a short time obtain a clear idea of the general scheme of exemptions from local taxation. The work is sensible and readable, and its material is comprised in a moderate space.

Correspondence.

To the Editor of THE BUILDER.

HERALDRY IN ARCHITECTURE.

SIR,—As a student of heraldry from my boyhood, t was a real trouble to me to be unable to hear Mr. St. John Hope's paper, but, thanks to your report of it, I am able to realise the treat that I missed, and the excellent discussion provoked by it is a most healthy sign.

In my thirty years' practice it has always been my aim to introduce heraldry wherever I can do so suitably and worthily, but the dislike shown by many well-bred Englishmen to its introduction is both amazing and inexplicable. So different, indeed, to our German cousins, who use it so freely. In Ulm Cathedral, for instance, the shields, helms, and tilting spears of the Ritters appear, as also on tha pews of the tradesfolk. I would like to mention other foreign examples: to wit, the tombs of the prince-bishops at Mayence, full of fine composition and beautiful modelling; the churches and house-fronts in Rothenburg, on the Tauber; the shields in the vaulting of Bayonne Cathedral; in the house of Jacques Cœur, at Bourges; in the Château of Meillant; in the restored Château of Pierrefonds. Nor are we without good modern examples at Cardiff Castle, Eatington Park, Combe Abbey, &c.

With regard to the origin of the lozenge used by ladies, surely the reason is that the term "spinster," denoting the old occupation of the fair sex, is set forth by its similitude to the *distaff* when wound up, a manor in France being described as "en quenouille" when owned by a lady. But perhaps a better account may be forthcoming.

I venture to think that no detail in buildings can be made more interesting, telling, and beautiful (in competent hands full of the science of heraldry) than that which is founded on heraldic lines, it being necessarily full of meaning, which much modern ornament is not.

Pugin, Burges, and Nesfield are names connected with heraldry, of whose works we may be justly proud.

As a rule (of course there are exceptions to it) one may say that the arches of the 13th, 14th, and 15 h centuries, when inverted, represent very fairly the shields of those periods: as a factor in "l'art de vérifier les dates," this is worth remembering.

It is good to know that Mr. St. John Hope's paper is to be followed by one on the same subject by Mr. Gotch; the period he has selected is of great interest, and he is a master of it. His own county of Northampton (mine also in the past) is well to the fore in noble examples in churches, houses, tombs, and buildings, and, being nearest to our own day may do much to influence it for good.

E. SWINFEN HARRIS.

COLLECTING AREA FOR A RAIN-WATER TANK.

SIR,—Your correspondent "Homo" will probably find that the best covering surface is the chalk itself, stripped of all vegetable soil, and beaten by the hoofs of horses, or "punned" into consistency in the same way as are the bottoms of the small ponds common on the South Downs. It would, of course, require to be kept clean, and renewed occasionally, but would be infinitely cheaper than any artificial covering.—Your obedient servant,

FRANK SILBY.

"SKETCHES OF LONDON STREET ARCHITECTURE."

SIR,—I was sorry to read the letters rom Mr. J. S. Williams, in which he asserts himself as the architect of 63, Sloane-street. I was called in as an expert in a recent dispute between the builder and the owner of 63, Sloane-street, and on no occasion was the fact disputed that Mr. Wade was the architect. Mr. F. B. Wade was referred to in the builder's affidavits as the architect and Mr. J. E. Williams as assistant. Applications for payments and instructions were made to Mr. F. B. Wade, and I saw drawings with notes in Mr. Wade's handwriting.

J. I. WILLIAMS.

Mansion House Farm, Crowhurst, Surrey.

The Student's Column.

SPECIFICATIONS.—XIII.

GAS FITTER.

THE usual way of specifying gas fitters work is as follows:—The gas to be laid on from the Company's mains to the meter in with ½-in. patent strong galvanised wrought-iron welded tube, jointed in red lead cement with all the necessary bends, elbows, T's, crosses, junctions, stopped ends, diminishing sockets, nipples, and other necessary fittings. The gas tubing to be stout composition pipes soldered at joints, and the gas is to be laid on to the following points. The situation of the various lights are then enumerated and the gas fitter is left to use his own discretion as to the size of pipes and method of running. This can hardly be considered satisfactory, as it leaves the way open for the contractor who intends to scamp the work, and does not give a fair chance to the man whose aim is to carry out his work properly.

Another method specially favoured by quantity surveyors is to specify approximately the lengths of piping required, and to enumerate the number of fittings at p.c. prices, leaving all the details to be settled when the building is in progress by the architect. Still another way of getting over the difficulty is to put the work into the hands of a trustworthy gasfitter as a sub-contractor, and include the amount of his prices as a provisional sum in the specification.

Assuming, however, that the student will desire to know how to specify gas fitters' work with the same degree of care that he devotes to the work of other trades we may proceed as follows, taking some hints from the useful little handbook published by Messrs. James Stott & Co.

Meter and Service.—The contractor is to give notice to the Gas Company, and obtain from them a properly stamped dry gas meter for lights, and fix same on inch deal shelf, supported on wrought-iron brackets in , and shall pay all fees for connecting the service from the main to meter by the Gas Company.

Pipes.—The pipes are to be wrought-iron welded tubing, with all necessary bends, tees, angles, and connexions, and of the weights, and screwed to the standard threads, as shown on schedule below, and are to be capable, when fitted, of resisting an internal pressure of 60 lbs. to the square inch.

Int. Diam. Pipe.	Weight per 100 ft.			Threads per inch.
	cwts.	qrs.	lbs.	
¼	0	1	14	19
⅜	0	2	6	19
½	0	3	6	14
¾	1	0	22	14
1	1	3	0	11
1¼	2	1	11	11
1½	2	3	7	11
2	3	3	21	11
2½	5	0	6	11
3	6	0	20	11

Int. Diam. Pipe.	Weight per Ten Elbows.		Weight per Ten Tees.	
In.	lbs.	ozs.	lbs.	ozs.
¼	1	7	1	8
⅜	1	13	2	4
½	2	15	3	0
¾	4	6	5	4
1	6	4	7	10
1¼	10	10	12	15
1½	15	8	16	7
2	22	6	27	0
2½	46	2	50	15
3	73	8	85	5

The contractor is to supply all bends, elbows, sockets, tees, back-nuts, nipples, plugs, caps, wall-hooks, pipe-clips, screws and other material necessary. Bends are to be used in place of elbows wherever possible, and where it is necessary to use elbows they are to be of the pattern known as "round elbows." The pipes are to be stayed by wall-hooks or clips at intervals as stated below.

¼ in., ⅜ in., and ½ in. pipes, one stay every 6 ft.
¾ in., 1 in., and 1¼ in. ,, ,, 9 ft.
1½ in., 2 in., 2½ in., and 3 in. ,, ,, 12 ft.

If composition pipes are to be used they should be specified of the following weights:—

Int. Diam. of pipe. In.	Weight per yard. lbs. ozs.
¼	0 13
5/16	1 0
⅜	1 5
7/16	1 10
½	2 2
⅝	3 4
¾	4 4
⅞	4 12
1	5 8

(If there is any length of piping underground it should preferably be of cast-iron, or if the pipes are of wrought iron they should be protected by wooden box troughing, packed with dry sand, and flushed with hot pitch.)

No pipes are to be bedded in plaster or in walls, but they are to be kept 1 in. clear from finished surfaces of walls and ceilings. (This is highly desirable for the sake of the pipes, and for the detection of any leakage that may subsequently occur. But if considered unsightly, the architect will use his own discretion as to casing, or even bedding the pipes in the plaster). The gas fitter is to obtain the approval of the architect to all lines of piping, and is not to cut away any joists or other woodwork, except as may be specially allowed by the architect. (Of course, the best way of arranging for gas fitting is to supply drawings showings where pipes are to be placed, but this is very seldom done.) Floor boards over pipes to be fitted to remove easily, and fixed with brass cups and screws.

Syphon-Box.—All gas-pipes are to be laid with a slight inclination towards the meter, and a cast-iron syphon-box with sockets for pipes, capacity four gallons each, fitted with loose lid bolted to flange, and provided with ¾ in. wrought-iron suction pipe, is to be fixed where directed near to meter.

Governors.—Provide and fix where directed No. 1¼ in. Stott's self-acting gas-governors, No. ¾ in., and No. ½ in. ditto.

Stop Cocks.—Provide and fix where directed the following stop-cocks. (Give list for various sizes.) These are to be strong, brass full-way stop-cocks, square headed with loose keys, with brass screw unions to pipes.

Lines of Piping.—The piping to main from to to be 1¼ in. wrought-iron gas barrel, with 1 in. secondary mains from to , ¾ in. branches from to , and ½ in. supplies to . In laying piping, any pipes that have to be bent shall be first heated to redness and bent whilst hot. Care is to be taken that the sectional area of pipes is not diminished, and no piping will be passed unless it is of full diameter. Joints are to be strongly screwed up, and made firm and gas-tight with white lead and hemp.

Fittings.—Provide and fix No. two arm wrought iron pendants, ¾ in. by ½ in. by 60 in. long, No. two arm bronzed brass pendants 1 in. by ¾ in by 54 in. long, No. single jointed bronzed brass brackets ¾ in. by 13 in. long. No. stiff wrought-iron brackets ¾ in. by 10 in. long, and allow the sum of p.c. for fittings to be selected by the architect to be fixed in the following rooms. (Give a list of the points where the selected fittings are to be used.) The contractor is to provide storage for all fittings when delivered on the premises as well as the pipes, etc., which he may himself supply, and is to protect same from rust or other damage.

Painting.—All wrought-iron pipes and fittings to be absolutely clean and free from rust before painting, and each to receive one coat of red lead and boiled oil mixed in small quantities and applied whilst fresh before being fixed, and the interior of the pipes to be painted with red lead and boiled oil and two coats of lead paint afterwards, also before fixing. The exteriors to be painted after fixing with three coats in good lead and oil colours of approved tints, as directed by the architect.

Testing.—Provide the sum of two guineas to be paid for testing the gas fittings by the expert to be appointed by the architect, who will not approve gas fitting until such testing has been done, and the expert's fee paid.

N.B.—In arranging the gas fittings for churches and schools and other public buildings it is generally desirable to provide for by-passes, and the student should therefore specify where he desires these, that No. ½ in. brass cocks and by-passes are to be fixed where directed, the cocks to be lever taps with chains, stating whether brass or iron chains, and stout brass tablets marked "On" and "Off" respectively. Provision must also be made for lamplighters' torches.

When sliding pendants are used with the ordinary water tube arrangements, it is well to specify that a small quantity of olive oil should be poured on top of the water in order to prevent evaporation.

GENERAL BUILDING NEWS.

NEW THEATRE, TUNBRIDGE WELLS.—A syndicate has been formed to erect a new theatre at Tunbridge Wells. Mr. John P. Briggs, of London, has been appointed architect.

SCHOOLS, WHITWELL, DERBYSHIRE.—On the 13th inst. the Duke of Portland laid the memorial stone of new voluntary schools at Whitwell. The buildings comprise an infants' school for 300 scholars, senior departments for 150 girls, and the same number of boys, who will be taught separately, two residences, one for the master, and one for the mistress, together with covered playground and all the necessary out offices. Gothic is the style adopted, and the schools will be erected in red brick with Mansfield stone dressings, while the roofs will be covered with red tiles. Mr. Joseph Smith, of Hartshead, Sheffield, is the architect, and Mr. J. Collingham, of Langwith, the contractor.

POLICE STATION, WELLINGTON.—This building occupies a position at the corner of Church-street and Plough-road. It is built with Lilleshall pressed bricks, and Grinshill stone dressings, and is in the Italian style, with the new arms of the county surmounting the principal façade. On the ground-floor there is a charge office, and an office for the superintendent immediately adjoining. In close proximity to the charge office, and leading out of the same, are four cells. A staircase is provided leading from the cell corridor to the dock in the court above. Adjacent to the cells is a prisoners' airing yard surrounded by high walls. On the first floor there is a Petty Sessional Court with a slightly raised gallery at one end for the public, and a witnesses' waiting-room, and solicitors' retiring-room, with lavatory accommodation adjoining. Adjacent to the Bench is a retiring-room, with lavatory accommodation, for the use of the magistrates. The public entrance to the court is from Church-street, and there is a private entrance for the magistrates from Plough-road. There is a house adjoining for the superintendent or sergeant in charge, and in the rear there are a large drill-yard and a stable and gig-house. The whole of the public part of the building is warmed on the high-pressure hot-water principle. The court roof and fittings are of red deal, stained and varnished. Mr. A. Roper, of Wellington, has carried out the work, under the superintendence of Mr. A. T. Davies, the County Surveyor, and his chief assistant, Mr. M. S. Stobbs.

SCHOOL, PITLOCHRY, PERTH.—From thirty-two competitive designs submitted for a new central school, Pitlochry, that by Mr. C. S. Robertson, architect, Perth, was selected. The building is one story in height and Gothic in style. Its general shape may be described as resembling the letter L, the court forming the back or west side of the school, which will be about 160 ft. in length on either side. The main elevation faces the east. The main entrances for the boys and girls are separate. The cloak-rooms and lavatories are placed near the main entrances. Rooms for the headmaster and for the teachers are also near the main entrances. Each classroom has separate doors for boys and girls, but separate entrances and passages leading to them. The infants' classroom is divided by a movable glass partition. Two classrooms in the north wing are similarly divided. The secondary department consists of one large classroom, occupying part of the front on the east elevation of the building. It is proposed to heat the school by means of hot-water pipes on the low-pressure system. The heating chamber is placed in the basement. The school is designed to accommodate 620 scholars. The total cost is estimated at about 6 000*l.*

CATHOLIC CHURCH, DUNDEE.—On the 17th inst., the foundation stone of a new church was laid on a site at the corner of Arthurstone-terrace and Maitland-street, Dundee. The architect is Mr. T. M. Cappon, of Dundee. The church, which will accommodate 800 persons, is to be built of red stone from Ayrshire, while the rubble is to come from Berry Muirhead Quarry, Forfar. So far only the mason contract has been fixed, and it has been entrusted to Mr. Wm. Bennet, Dundee.

RACECOURSE BUILDINGS, LINCOLN.—The improvements on the Carholme, Lincoln, have now been completed. The improvements effected are to the east of the Grand Stand, which is situate on the south side of the racecourse. The old wooden stands have been pulled down, and in their place has been erected a brick structure, with iron stanchions, steel girders, and a roof of corrugated iron. The stand will accommodate 2,500 persons. At the east end of the stand entrance is gained to a refreshment-bar, 56 ft. by 38 ft. A kitchen serves the luncheon-room on the one side, and a dining-room, 38 ft. by 26 ft., on the other. Accommodation has been provided for ladies. Behind the stand at the east end are the police-office cells. East of Tattersall's ring is a saddling paddock occupying about a third of an acre, with brick and tiled shed for exercising horses in inclement weather. The architects of the new stand were Messrs. W. Mortimer & Son, Lincoln; and the builders were Messrs. Wright & Son, Lincoln, the contract price, exclusive of the saddling paddock, being over 3 000*l.*

ALTERATIONS, ST. BLAZEY CHURCH, CORNWALL.—Tenders having been invited for re-roofing and internal alterations of St. Blazey Church, from plans by Mr. Sedding, of Plymouth, eight tenders have been received. That of Messrs. Hobbs & Bartlett, Callington, 535*l.* 10s., has been accepted.

WESLEYAN CHURCH, ALREWAS, STAFFORDSHIRE.—The foundation stones of the new Wesleyan church and school, Alrewas, were laid recently. The building will be of red brick, relieved with stone dressings. The plan of the church is cruciform, and the transepts and vestries connect into the school which runs parallel, forming a quadrangle. There will be an apse, with pulpit at the side, and another feature of the building will be the open-timbered hammer-beam roof. Entrance will be made by means of a narthex, extending the whole width of the front of the building. The church will accommodate 300 persons, and the Sunday school 250. The cost of the building is estimated at 1,025*l.*, and the contractor is Mr. R. Kershaw, Burton-on-Trent. Messrs. Gordon, Lowther, and Gunton, of London, are the architects.

NEW SCHOOLS AND CHAPEL, LEEDS.—Foundation-stones of new schools and chapel, in connexion with Oxford-place Wesleyan Methodist Chapel, Leeds, have just been laid. The joint architects are Mr. George F. Danby and Mr. William H. Thorp. If funds had permitted of the erection of an entirely new structure, the chapel building would have been raised to a considerable height, with the floor elevated on a basement stage. As it is, the old boundary-wall and entrance-gates will be removed, the ground-floor raised 15 in., and a flight of steps will be constructed across the whole of the chapel front, giving access to the principal entrance-porch in the centre of the façade, and also to the two side entrances. The building will be carried up to an additional height of about 24 ft. from the main cornice level by means of a central pedimented gable, and cupolas at either side, crowning corner pavilions. The leading features of the front will consist of a rusticated ground-floor stage, with piers, banded alternately with brick and stone ashlar work, marking the angles of the corner pavilions and the central gable; a bold projecting central porch, with a segmental arched canopy carried on rusticated piers, and coupled Ionic columns; and two square-headed side-entrances, with circular fanlights and carved spandrels. The upper first-floor stage will be embellished by coupled and single columns, with carved composite capitals of a Renaissance character, carrying a bold entablature, with a projecting cornice. A three-light window in the central gable will be surmounted above the cornice level by a moulded, rusticated arch, the tympanum of which will be filled in with a moulded circular light and carved side panels. The synod hall, which will be brought up to the frontage line, will be connected with the principal front by means of a quadrant. A tower about 110 ft. in height will form a leading feature in the block. On the plan it is square-shaped up to the top of the stage immediately above the eaves of the main building, with rusticated angle piers and carved scroll terminals, and it is then surmounted by an octagonal belfry stage with open arcaded sides, carrying an ogee-shaped, domical roof. A treatment similar to that of the central gable of the chapel will be employed at the gable end of the lecture hall. The Park-lane elevation of the chapel will be re-faced with brick and stone work, with a pavilion at the south-west angle, with a lead-domed roof and two projecting central bays, with rusticated pilasters carrying moulded cornices and pedimented gables. The new Sunday-school building, fronting Oxford-row, is designed to harmonise with the chapel renovation, but its design is of a more domestic type. The principal block, with high-pitched roof over the large schoolroom, will have gables at either end, with moulded carved sides and pediments, and two small gables in the centre of the front to relieve the eaves line. The first-floor stage will be treated with rusticated projecting pilasters. When completed, the school, which is to be lighted by electricity, will accommodate 660 children. It is estimated that the total cost of the alterations and extensions will be 18,000*l.*

LIBERAL CLUB, DEWSBURY.—On the 20th inst. Mr. Oldroyd, M.P., opened a new club-house in Boothroyd-lane, Dewsbury, named the Gladstone Liberal Club, and which has been erected from designs by Messrs. D. & W. Thornton, architects, of Dewsbury.

ST. MARY'S CHURCH, OXFORD.—The sum of 1,750*l.* is to be spent on the restoration of the pinnacles and battlements of the nave of St. Mary's (the University) Church, in accordance with the design of Mr. T. G. Jackson, R.A.

CHURCH AND SCHOOLS, PARKGATE, NEAR CHESTER.—New church and schools are being erected on the Parade, Parkgate, according to the plans and under the superintendence of Messrs. Frederick Fraser and Warburton, architects, Warrington. The cost of the building is estimated at 9,000*l.* Further extensions to the schools are contemplated over the above sum, and the architects are preparing plans. These include the erection of a large covered playground, roofed in a single span of 100 ft. The contractor for the work is Mr. Wm. Fleming, of Neston.

TENNENT-STREET MISSION HALL AND SCHOOLS, BELFAST.—The new schools connected with Donegall-street Independent Church were recently opened. The architect of the building is Mr. T. H. M'Call, and the builder Mr. George Alexander. The upper part is to be used for Sabbath-school and mission work, and the lower as day-schools.

NEW CHURCH FOR FLOOKBURGH, LANCASHIRE.—The parish of Flookburgh, Cark-in-Cartmel, is to be provided with a new church. Plans of the projected structure have been prepared by Messrs. Austin & Paley, architects, of Lancaster.

CONGREGATIONAL CHURCH, STAFFORD.—This building has just been reopened after alterations, &c. It has been lengthened 15 ft. A new front has been erected. The stone portico, which for many years formed the entrance to the old Infirmary at Stafford, has been adapted to the new front of the building. The interior has been almost rebuilt. A new rostrum and platform have been erected; the organ has been brought from the gallery to the ground floor, and is placed to the left of the minister; the galleries are entirely new; as are also the windows, which are filled with leaded lights of tinted glass. There is now a vestibule with double doors. The building is lighted by the electric light, which has been installed by Messrs. Lea, Son, & Co., of Shrewsbury. The architects were Messrs. Ingall & Son, of Birmingham, and the builder Mr. J. Biggs, of the same city. The painting has been done by Mr. Adams, of Stafford, and the organ has been enlarged and re-erected by the original builder, Mr. Banfield, of Birmingham.

THE USHER HALL, EDINBURGH.—The special committee of Edinburgh Town Council, charged with the duty of looking out for a suitable site for the Usher Hall had before them on the 15th inst. sketch plans of the Charlotte-square and Music Hall sites, prepared by Councillor Cameron, and based on the information supplied by Mr. Morham, the City Architect, as to what was necessary to be provided in a desirable scheme. After considering the two sets of plans, the Lord Provost moved that the sub-committee should now report to the Lord Provost's committee as to the present position of the matter, and recommending the adoption of the site on the north side of Charlotte-square, which, it was said, could be acquired at a cost not exceeding that of any other eligible site in the city. Dean of Guild Miller seconded the motion. Treasurer M'Crae moved, and Mr. Telfer seconded, delay, but the motion was carried by a majority of six to two. The general scheme approved by the sub-committee contemplates the erection of the building on the area covered by the seven centre houses of the north side of Charlotte-square, the east and west wings, each containing two houses, being left as at present. A carriage-way at the level of Charlotte-square, 30 ft. wide, will be carried round the proposed block, giving direct access to and egress from all parts of the buildings. The sketch plans show on the street level a large central hall, about the size of the grand hall of St. Andrew's Halls, Glasgow. On the first-floor level there will be a grand corridor, or crush space, reached by double central stairs. A horse-shoe balcony will run round three sides of the grand hall, and a second gallery can be introduced if thought desirable. The central hall is flanked on either side by a chamber concert hall and another small hall, each with accommodation for between 400 and 500, and a spacious vestibule affords direct access to the inner lobbies. On the first-floor level, galleries for art or social purposes run the whole length of the east and west sides of the building. Although the halls were shown *en suite* on the plans, the arrangements are such that each of the halls can be used for separate gatherings at one and the same time without causing inconvenience, and all the halls can be approached by the grand entrance, besides their own side entrances. Ample accommodation is provided for reception-rooms, cloak-rooms, service-rooms, &c. The fall of the ground at the north side of the square gives facilities for a basement floor, where the heating and ventilating apparatus can be placed, as well as the necessary stores.—*Edinburgh Dispatch.*

ST. AUGUSTINE'S, KILBURN.—We are glad to learn that there is a probability of the tower and spire of Mr. Pearson's fine church at Kilburn being at length completed.

BOARD SCHOOLS, GREAT BENTLEY, ESSEX.—New schools for the Great Bentley School Board have just been opened near Bentley Railway Station. The school and master's residence are built of red brick relieved with Bath-stone dressings. The roofs are covered with brown Broseley tiles, and octagonal cloak-rooms are situate at the north and south ends. The schools have accommodation for 274 children, together with a board-room. The large room contains accommodation for 150, and is so arranged that on removal of a glass partition the room is enlarged to 22 ft. by 58 ft., with three entrances. The babies' room contains accommodation for fifty-four infants, and the boys' class-room for sixty. Round each of the rooms runs a wooden dado, and the corridors have a dado of salt-glazed brick. The flooring is of wood blocks, and Boyles' foul-air exits and Johns' fresh-air inlets have been used throughout. The schoolmaster's house adjoins

the schools. The architect for the schools is Mr. J. W. Start, F.S.I., of Colchester and Harwich, and the contractor Mr. E. West, of Chelmsford.

SANITARY AND ENGINEERING NEWS.

HALIFAX SEWAGE WORKS.—At the Halifax Town Hall recently Major-General H. D. Crozier, R.E., conducted an inquiry on behalf of the Local Government Board into applications by the Corporation to borrow 32 000*l.* for purposes of sewerage and sewage disposal, 25,000*l.* for waterworks purposes, and 364*l.* for swing doors for the New Markets. The Town Clerk (Mr. K. Walton) appeared for the Corporation. The Borough Engineer (Mr. E. R. S. Escott) was called, and presented the various details of estimated expenditure.

WHITBY IMPROVEMENTS.—On the 18th inst., Col. W. Langston Coke, M.Inst.C.E., held an inquiry at the Urban District Council Chamber, Whitby, respecting the Council's application for authority to borrow 2 500*l.* for the construction of new roads on the West Cliff. Mr. T. K. Scott, Town Surveyor, produced plans of the improvements, after which evidence was given in favour of the proposal.

WATER SUPPLY, BELPER.—An inquiry was held in the High-street School, Belper, recently, by Mr. F. H. Tullock, M.Inst.C.E., one of the Inspectors of the Local Government Board. The District Council had made application for a loan of 8,400*l.* to lay mains and pipes in connexion with the water supply. The Engineers (Messrs. C. & F. W. Hodson), and the Clerk of the works (Mr. Samples) were in attendance. The plans were laid before the Inspector.

SEWERAGE OF PEMBROKE.—At a meeting of the Pembroke Town Council recently, the scheme for the sewerage of Pembroke, submitted by Messrs. F. Beesley & Sons, Westminster, with some modifications respecting the outfall, was adopted, and it was decided to submit it to the Local Government Board forthwith. The works will cost about 6 000*l.*

SEWERAGE SCHEME, CAMBRIDGE.—A Local Government Inquiry was conducted at the Guildhall, Cambridge, recently, by Col. J. T. Marsh, R.E. The subject was the application of the Town Council for sanction to borrow 25,000*l.* for works of sewerage and sewage disposal. There were present Messrs. J. E. L. Whitehead (Town Clerk), J. T. Wood (Engineer to the Works), and E. W. Harry (Borough Surveyor). There was no opposition.

ELECTRIC AND GAS LIGHTING AT DOUGLAS.—The Douglas (Isle of Man) Town Council, with a view to the better lighting of the bay front and the main thoroughfare to Woodbourne, on the outskirts of the town, invited tenders from the Electric Power Company for lighting by powerful arc lamps, and from the gas company by the most approved incandescent system. The former offers to light, free of all cost to the town, the promenade, main artery and thoroughfare to Woodbourne, with 67 arc-lamps of 1,200 candle power. In return they ask for leave to work the bay tramway with electric trolley cars, power to lay mains for private lighting, and to lay tramways to the railway station. On sale of the current they will pay 5 per cent. of the gross income, and 15 per cent. of the gross income of the North Quay tramway. The gas company offers to light the promenade with 120 double candle Wellsbach burners for 120*l.* a year, and the remainder of the town at a correspondingly low price.

PROPOSED NEW BRIDGE AT KEW.—For the last three years the Middlesex County Council and the Surrey County Council have been negotiating terms for the erection of a new bridge across the Thames at Kew. A short time ago it was announced that terms had been arranged between the two County Councils, and that the building of the new bridge would be proceeded with forthwith. Now, however, an intimation has been received stating that an unexpected hitch has occurred. It had been decided that the gradients of the new bridge should be one in forty, but it is found that in order to get such a gradient it will be necessary to raise the road crossing the foot of the bridge 6 ft., which will cut off access to a hotel on one side, and to some business premises on the other, and also seriously interfere with other rights of property. It appears that the only way to get out of the difficulty is to get a special Act of Parliament passed, and it is now too late to do that this year.

BUILDING A RAILWAY BRIDGE IN THIRTEEN HOURS.—At Loughborough, Leicestershire, south of the station, an old bridge was recently demolished, a new one constructed, and the metals relaid for the heavy week-day traffic in the short space of thirteen hours. The work became imperative to prevent the line being flooded during a period of exceptionally heavy rains. The new bridge is of steel, and the special feature connected with it is that no less than eight arches are constructed in one piece, the whole being supported by steel pillars instead of brick abutments as heretofore. The work was done under the superintendence of Mr. Loney, the Midland Railway Company's resident engineer at Leicester.

RANDY MERE RESERVOIR.—Messrs. Parker & Sharp, contractors of York, have been given the contract for the lining of the floor and sides of this reservoir with concrete; the work to be completed in twelve months.

FOREIGN.

FRANCE.—The Jury on Architectural exhibits at the Champ de Mars Salon this year is composed of MM. Chaine, Sauvageot, and Benouville, with MM. Gout and Plumet as Supplementary Jurors.——M. Chaplain, Member of the Institute, who succeeded M. Coutan, sculptor, as artistic director of the Sèvres Manufactory, has resigned his post. It will now be taken by M. Sandier, who has for several months been the head of the decoration works. The new Director is an architect. In America, where he has built several large hotels, he has made great use of *céramique* in architecture. He has also been attached to a large manufactory in the East.——The new buildings of the Museum reserved for comparative anatomy and paleontology will shortly be opened. They were built by M. Dutert, and are in the Rue de Buffon; the principal façade is in the Boulevard de l'Hôpital.——The annual exhibition of the pupils of the Académie Julian in the Rue Lafitte is announced, and also the exhibition of pastels by M. Albert Bussy in the Durand Gallery.——M. Raoul Verlet has just finished the monument in honour of Guy de Maupassant, which will be exhibited at the Salon, and is afterwards to be erected in the Parc Monceau, close to the Naumachie.——The Municipal Council of Nancy has asked the Government to establish a complete system of fortifications round the town.——The pretty façade of the old chapel of Notre Dame de Galles at Cosne is being destroyed. It dates from the eleventh century.——There is a question of preserving in a State museum the decorative group which crowns the central pavilion of the Palais de l'Industrie, also the large bas-relief under the arch of the entrance door of the Palais. These two works were executed in 1854 by MM. Elias Robert and Vilain.——The town of Châlons-sur-Marne has just opened a competition for the enlargement of the College Communal. The expense is estimated at 400,000 francs.——M. Ferdinand Faivre, sculptor, pupil of MM. Cavelier and G. Barrias, has just been commissioned by the Egyptian Government to decorate the new museum of antiquities at Cairo. For the principal door there will be two caryatides, 4 metres 75 centimetres in height, symbolising "Haute" and "Basse Egypte."——The town of Avignon has just opened a competition for the building of a central market in this town. The expense is estimated at 400,000 francs.——The "Société historique" of Passy and Auteuil have taken the initiative of erecting a monument at the Ranelagh, commemorating the visit of the Emperor and Empress of Russia. This monument, which is to be executed by M. Gustave Michel, sculptor (grand prix at the 1896 Salon), will be five metres high.——The French Archæological Congress will hold its sixty-fourth session at Nimes from May 18 to May 25.

GERMANY.—We are pleased to be able to record the fact that the Emperor William has not forgotten architects and sculptors in his list of honours on the occasion of the ceremonies at Berlin. The Court sculptor, Professor Reinhold Begas, has been given the Cross of the Hohenzollern Order; his brother, Carl Eegas of Cassel, and his assistants—Messrs. Bernewitz, Cauer, Felderhoff, Goetz, and Waegener have received distinctions—and likewise the architect, Gustav Halmhuber. "Baurath" Werner of Berlin has received an order. The clerk of works, foremen, and contractors, on the Emperor William I.'s monument have also not been forgotten.—A considerable amount of sculpture has been ordered for the Houses of Parliament at Berlin, in which the interior decorations are as yet far from complete. Professor Wallot, the architect, has also already given several commissions for the fresco work.——No less than fifteen groups of sculpture have now been ordered by the Emperor for the Avenue of Victory. From an official report we see that the monument to the Emperor Frederick, which has been erected by voluntary subscription on the battlefield of Worth, has cost nearly 15,000*l.*, of which the monument proper has absorbed 12,500*l.*—The Municipality of Berlin are considering the erection of four more bridges over the waterways in their city. There is to be a new Alsen bridge at a cost of about 25,000*l.* There is to be a bridge at the Ross Strasse costing about 8 000*l.*, and the Mockern bridge is to be renewed at a cost of 15,000*l.* There will be a fourth bridge costing about 22,000*l.* The extent of the building operations in the City Engineer's Department, more particularly in respect to bridges, is remarkable.——Considerable improvements are to be made to the main thoroughfare of Berlin "Unter den Linden" in the neighbourhood of the Opera House, which itself is also to undergo further considerable alterations. It is not improbable that two wings will be added to the Opera House, which would certainly be an advantage as the accommodation in this building is very cramped. The new wings will encroach on certain side thoroughfares which the Municipality will, however, present to the Royal owner of the building.——The annual Schinkel celebration took place recently under the auspices of the Berlin Architectural Society, and was followed by a banquet.——We have to record the death of Overbaurath Matheis at Munich, who held a leading position in the Office of Works for the Bavarian Government since 1882; also that of Professor Kopp, whose work was particularly associated with the Royal Technical College at Stuttgart. He was a sculptor by profession, and a master of architectural modelling and bas relief work. The sculpture carried out in his studio will be found on most of the principal buildings at Stuttgart.——There will be the usual Annual Art Exhibition this year, and the exhibition buildings near the Lebrte Station will again be used. An influential committee of artists representing the Royal Academy and the various artist associations will form the executive of the show.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Messrs. Smith, Brodrick, & Lowther, architects, have removed from Cogan-chambers, Hull, to York-chambers, 77, Lowgate, in the same city.——Messrs. Easton, Anderson, & Goolden are changing their address this week from 3, Whitehall-place to Broad Sanctuary-chambers, S.W. They have given up their office at 22, Billiter-street.

ROMAN LINCOLN.—Digging commenced on the 15th inst. for the remaining column of the Roman colonnade, which it was expected would be found under the pavement in front of Mr. W. Blaze's shop in the Bail, and in the course of the day the workmen made a discovery of quite an unexpected character. It was thought that perhaps this pillar might have been a double one, to correspond with the one next it on the north, but it was found to be a triple column. The main shaft appears to be exactly in a line with the columns previously exposed, and it is larger than the other two, into both of which it is let almost at right angles. A singular feature of this tripie column is that the mouldings on each are of a different height from the base. The discovery of this column tends to support the view held by the late Precentor Venables, that these extra shafts were introduced in order to give an air of strength and solidity to the corners of the building rather than to remedy some failure in the architecture of the portico, which latter was regarded as the more likely when the first double column was discovered. The nineteen columns, of which the colonnade is now known to have consisted, stand as follows:—The first column to the north, and which was the first discovered, is a double column standing east and west; then, at intervals of about 16 ft., are four single columns; next is a double column standing north and south, and then comes the triple column just unearthed, five single columns at similar distances, and then two double columns, both standing north and south; four more single columns, and finally, at the south end, a double column, standing east and west. With one exception, therefore, all the twin columns stand one way. Plans of the latest discovery are being made by Mr. H. H. Dunn, architect, Lincoln, and will be deposited at the Corporation offices. Mr. Dunn has also made a coloured drawing of the beautiful tesselated paving found the previous week, and it is understood that the Corporation intend making further excavations at the place where this was discovered.—*Lincoln Mercury.*

SOUTHEND PIER WORKS.—A special meeting of the Southend Town Council was held on the 16th inst. to seal the supplemental contract for the pier works. The Town Clerk said the agreement was that Messrs. Murdoch & Cameron should go on under a fresh contract, with Mr. Brunlees as the engineer; but if any fresh question arose it was to be referred to a separate engineer as referee. Sufficient of the work was to be finished for the steamboats to use the pier by the Friday before Whitsun, and the whole within sixteen weeks. If they failed to complete the work, the Corporation could step in and remove the work done near the old pier-head, and the contractors would forfeit 1,000*l.* If the work were done, a bonus of 2,000*l.* was to be given to the contractor. The original security of 1,700*l.* had been replaced by a fresh bond of 2,000*l.* The contractors were to employ a competent foreman, and if they failed to do so, the Engineer could employ one and charge the firm with the expense. The terms of the contract were more stringent than those of the old one, and in the Corporation's favour. There was to be no more law over it; every question was to be settled by arbitration. The supplemental contract was subsequently sealed.

GREEK HISTORY AND MONUMENTS.—In the third and last of a series of lectures on "Greek History and Extant Monuments," Professor Percy Gardner, at the Royal Institution, recently pointed out how, in ancient Athens, political history ran parallel to the development of art and religion, and each completed the other. After the Persian wars the Athenians came back to their city in no conservative spirit. The first thing they did was to rebuild the city walls, and they took the materials ready to hand, including fragments of columns, sepulchral monuments, &c. Then they turned their attention to the Acropolis, and the buildings which they erected were still the admiration of the world. The history of the great temples was very striking. One of the first of the gods to be honoured was Pan, whose grotto was set up in gratitude for his supposed interference on their behalf at the battle of Marathon. The wooden statue of Athena, carefully preserved, was safely housed, and Themistocles evolved a project for a new temple, but his plans were stopped by his fall. Pericles

found he had a great opportunity, and, in spite of protests as to the use of money intended for defence being used in this manner, continued the work, assisted by the great sculptor Pheidias. A great bronze statue of Athena, standing 40 ft. high, on a pedestal, was erected, and employment was given to all sorts of artificers and workmen. The Parthenon, with its statues, carvings, &c., gave an ideal summary of Athenian history. In succeeding years a more conservative spirit set in, but still every great event was commemorated by some addition to the glories of this unique structure. Greek art lay at the root of all art; it represented in outward form the growth of the nation, its poetry, religion, martial enterprises, and politics, and was therefore worthy of the deepest and closest study.

ABERDEEN GRANITE ASSOCIATION. — The annual assembly of this Association took place in Douglas Hotel, Aberdeen, on the 19th inst. Councillor Boddie, in proposing "The Town and Trade of Aberdeen," referred to the large demand for polished granite fronts for London and the provinces. Baillie Taggart, who presided at supper, replying for the toast of "The Association," spoke of the proposed granite statue of Hygeia for Duthie Park, and said the Association were to present to the Aberdeen Art Gallery and Museum a collection of different granites as a permanent exhibit.

REREDOS, NEWTON FLOTMAN CHURCH, NORFOLK.—A memorial reredos in stone (a gift to the church) was dedicated a short time since by the Bishop of Thetford at Newton Flotman. The design of the reredos was by Mr. Lee, architect, London. The stonework and carving of the diaper work which fills the panels has been executed by Mr. A. W. Perfitt, Long Stratton.

FIRE AT BUILDERS' PREMISES.—Shortly after one o'clock on the morning of the 22nd inst. an outbreak of fire occurred on premises in Warren-lane, Woolwich, occupied by Messrs. Kirk & Randall, builders. The fire originated in the boiler-house on the ground floor, and in a short time the flames were spreading right and left, threatening to involve the whole building, which consisted of three floors, measuring 100 ft. one way by 300 ft. the other. A watchman, however, was on duty, and, getting a hydrant to work, he held the flames in check until the arrival of the firemen from the Woolwich and Shooter's Hill stations. Two more hydrants were then requisitioned, and within an hour the outbreak was under control.

OLD ARCHWAY, CHESTER.—The old archway of St. Michael's Church, Chester, is being preserved. The archway, or gateway, once formed the entrance from Bridge-street-row to St. Michael's Church, Chester, and was taken down in 1852, when the church was rebuilt. It consists of two periods of architecture, two-thirds being Norman work, while the doorway proper is about 400 years later. It has now been removed to the corner of Grosvenor Park called the Quarry, where another arch, which belonged to St. Mary's Nunnery, has found a resting-place since 1870.—*Chester Chronicle.*

THE IMPROVEMENT OF A HIGHLAND ESTATE.—A scheme of improvement has just been carried out on the Highland estate of Loch Rosque, in Rossshire, the property of Mr. Bignold. A considerable sum of money has been expended in beautifying the grounds around the mansion house, but the principal feature of the improvement has been the planting with forest trees of the hills for miles along the Achanault and Gairloch roads. The plans and designs, so far as the mansion house is concerned, were furnished by Mr. Carruthers, architect, Inverness.

OLD ARCHITECTURE IN LIVERPOOL.—At a recent meeting of the Liverpool Teachers' Guild at University College, Professor F. M. Simpson, M.A., Professor of Architecture, lectured on "Old Architecture in Liverpool." The lecturer dealt chiefly with eighteenth century architecture, as it was during that century that Liverpool, through its increasing trade with America and the West Indies, grew most rapidly. Rows of houses were built on what were then outskirts, but are now in the middle of the town. Such houses are found in Great George-square, Hanover-street and Duke-street, Islington, St. Anne-street, and St. Paul's-square. Round the cathedral the best old houses are seen, though many of them have been knocked down to make room for modern warehouses. The lecturer described the appearance of these eighteenth century houses, which, externally, are plain, even severe. The one rich spot which attracts the eye is the doorway, and although the principle is the same in all, the variety in design, slight as it is, is positively amazing. In front of the house were generally cast-iron railings and ornamental lamp standards, often masterpieces of the smith's craft. But, throughout all, the feeling left upon the mind is very impressive on account of the good proportions of their different parts. This effect is produced by the size and shape of the windows. They were buildings suited to the people who lived in them, and to the times in which they lived—simple but stately, plain but refined. Professor Simpson then showed a series of slides, as examples of good proportion and discreet use of ornament. Photographs of well-known old houses were then thrown on the screen to illustrate the beauty of the eighteenth century doorways, steps, gables, and iron railings. These included houses in Slater-street, Kent-street, Duke-street, Hanover-street, Great George-square, Daulby-street, Parliament-street, Union-street, and the almshouses near Arrad-street. The lecturer also showed some slides of the Cathedral, Town Hall, and Blue Coat School, and said that the latter was probably the oldest domestic building in the town, and the one which gave him most pleasure as an architect.

THE WIDENING OF FLEET-STREET.—On Tuesday next, the 30th inst., at the Commissioners of Sewers, Mr. Alderman Treloar will move that the necessary notices be served to acquire all interests in all the premises (fifteen houses) between Ludgate-circus and Salisbury-court, so that this important improvement may be at once proceeded with. The London County Council has agreed to pay 85,390*l.* towards the cost of this portion of the improvement, which, if adopted, will make Fleet-street 60 ft. wide, adding 16 ft. to the width from Ludgate-circus to Salisbury-court, that is to say, for 320 ft. of its length. The entire length of Fleet-street from Temple Bar to Ludgate-circus is 1,670 ft., so that the proposal is to widen at once about one-fifth of the whole length of the street.

DAGNALL PARK ESTATE, SELHURST, SURREY.—This freehold estate, adjoining Selhurst station, has recently been disposed of, and the purchaser has retained Messrs. Palgraves, 12, Victoria-street, S.W., as architects and surveyors for the extensive building operations to be commenced immediately.

THE CITY WALLS, EXETER.—On April 5 a length of about one hundred and ninety feet of the old city walls of Exeter is to be put up for auction, in connexion with surrounding land. We presume this means the destruction of the wall. About one-third of the city is still surrounded by its old wall.

PROFESSOR AITCHISON'S ROYAL ACADEMY LECTURES.—We have in type the promised table of dimensions of various Cathedrals, but we are obliged to postpone it on account of the space required for the Building Exhibition article.

LEGAL.

IMPORTANT POINT UNDER A BUILDING CONTRACT:

CASE IN THE COURT OF APPEAL.

THE case of Dodd *v.* Churton came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Lopes and Chitty, on the 20th inst., it being an action brought by a builder in the Whitchurch County Court against the building owner to recover the balance due under a building contract. The defendant admitted the claim, but he counterclaimed to recover 50*l.* as liquidated damages for delay in completing the work. It appeared that by the contract the plaintiff undertook to make certain alterations and additions to the defendant's house for 664*l.*, as set forth in the specification, and according to the general conditions annexed thereto. By Clause 1 of the general condition "the whole of the works and any other works that may be ordered as additions to this contract are to be executed and completed in the best and most workmanlike manner, and with the best materials of their several kinds, and everything to be done to the full spirit and intent of this contract, which is intended to comprise everything necessary to the perfect completion of the works. Every part of the works to be done to the satisfaction of the architects, and their direction to be followed in every respect, and their opinion on all questions relating to the works or contract to be final and conclusive." Clause 4:—"Any authority given by the architects for any alteration or addition in or to the works is not to vitiate the contract, but all additions, omissions, or variations made in carrying out the works for which a price may not have been previously agreed upon are to be measured and valued and certified for by the architects and added to or deducted from the amount of the contract as the case may be according to the detailed schedule of prices on which the contract was formed. The schedule of prices to apply to all deductions and to additions up to 15 per cent. above the amount of the contract; any additional works beyond 15 per cent. above the amount of the contract and any item to which the schedule of prices does not apply to be allowed for at such prices as the architects may consider fair and reasonable." Clause 24:—. . . "The whole of the works to be completed by June 1, 1892, under a penalty of 2*l.* per week for every week that any part of the works remains unfinished after that date as liquidated damages." It transpired that extra works to the amount of 22*l.* 18*s.* 8*d.* were ordered, and the total works were not completed until twenty-seven weeks after the time specified for completion. The defendant, after allowing two weeks' additional time for the completion of the extra works ordered, counterclaimed for 50*l.*, being 2*l.* per week for twenty-five weeks, as liquidated damages for the delay in completion. The learned County Court Judge held that the ordering of the extra works was a waiver of the stipulation to pay damages for delay, and gave judgment for the plaintiff on the counterclaim. In the Divisional Court Mr. Justice Wills agreed with the learned County Court Judge, while Mr. Justice Wright differed, the judgment of the learned County Court Judge therefore standing. The defendant now appealed.

At the conclusion of the arguments of counsel the Master of the Rolls, in giving judgment, said that the extra work admittedly delayed the completion beyond the time that would have been occupied in executing the specified works. The contract gave the building owner the right to call upon the builder to do extra works. A recognised rule had been laid down in "Holme *v.* Guppy," that if the building owner ordered extra works beyond the specified works which increased the time necessary for completion, the building owner was disabled from claiming penalties for delay in completion. If that were not so it would be a most unreasonable burden to put upon the builder to do extra works, and then if the whole works were not completed within the specified time to claim the specified penalties from him. Again, it was laid down in "Westwood *v.* the Secretary of State for India" that the fact that the contract entitled the building owner to call upon the builder to do extra works did not prevent the application of the above rule. Then came the case of "Jones *v.* St. John's College," which was an exception to that rule. In that case it was stated in the pleadings that the builder had agreed that if extra works were ordered to conclude the entire works within the stipulated time. The Court held that if the builder were foolish enough to agree to that, even though it became impossible to complete the works within the time, he must take the consequences. In the present case the builder did not by the agreement undertake such a foolish responsibility. The rule of construction was that if a particular construction allowed of an unreasonable result the court would be slow to adopt that construction. In the case of "Jones *v.* St. John's College" the contract was set out in the pleadings and admitted on demurrer. The present contract could not be construed as was the contract in Jones's case. Therefore, the building owner, if entitled by the contract to order extra works, had by ordering the extra works deprived himself of the right to claim the penalties They would, therefore, adopt the judgment of Mr. Justice Wills in preference to that of Mr. Justice Wright.

The Lords Justices concurred, and the appeal was accordingly dismissed with costs.

Mr. E. H. Lloyd appeared as counsel for the defendant (the appellant) and Mr. Loehnis for the plaintiff (the respondent).

THE WORKING CLASS DWELLING SECTIONS OF THE LONDON BUILDING ACT SUCCESSFULLY EVADED.

AT the Worship-street Police-court, on the 17th inst., Mr. Hyman Davis, builder and property-owner, of 65, Bishopsgate-street Without, appeared before Mr. Haden Corser in answer to a summons taken out by the London County Council for having failed to comply with a notice calling upon him to set back the front wall of No. 105, Brick-lane, Spitalfields, so that every part thereof should be at a distance in every direction not less than the "prescribed distance" from the centre of the roadway (viz. 20 ft.) in accordance with Sections 13, 14, and 200 of the London Building Act, 1894, the said house having recently been erected at a distance of only 12 ft. 1 in. from the centre of the roadway to a height exceeding the width of the street, and being alleged to be now occupied by persons of the working class.

Mr. T. Seager Berry, in opening the case for the London County Council, drew the magistrate's attention to the fact that there was no definition in the London Building Act of the term "persons of the working class," but referred him to the definition embodied in Section 75 of the Housing of the Working Classes Act, 1890, which limited the term "letting for habitation by persons of the working class" for the purposes of that section to "letting a house or part of a house at a rent not exceeding in London 20*l.* a year." There was, however, a further definition which might be of assistance, namely, that contained in the Standing Orders of the House of Commons, and embodied in the South-Eastern Railway Company's Act, 1896, and many other Railway Companies' Acts, which was as follows: "The expression 'labouring class' means and includes mechanics, artisans, labourers, and others working for wages; hawkers, costermongers, persons not working for wages, but working at some trade or handicraft without employing others except members of their own family, and persons other than domestic servants whose income does not exceed an average of 30*s.* a week, and the families of any such persons who may be residing with them." He then pointed out the conditions under which a builder was entitled to build within the prescribed distance, as set forth in Sub-Section 5 of Section 13, viz., that where it was desired to alter or re-erect a building existing either at the commencement of the Act, or at any time within seven years previously, and which stood within the prescribed distance, it was permitted by the Act to do so, provided that the builder got the plans of the old building certified by the District Surveyor; but the privilege in Sub-Section 5 was restricted by the following proviso:—"Provided always that no dwelling house to be inhabited or adapted to be inhabited by persons of the working class shall without the consent of the Council be erected or re-erected within the prescribed distance to a height

exceeding the distance of the front or nearest external wall of such building from the opposite side of such street, and that no building or structure shall be converted into such dwelling house within the prescribed distance so as to exceed such height." He contended that Mr. Davis had lost the privilege conferred by that section inasmuch as the building had been erected within the prescribed distance to a height exceeding the width of the street, and was now occupied by persons of the working class, and that by Section 206 the exemption or privilege enjoyed ceased when the building became used by persons of the working class and the building thereupon became subject to the provisions of Section 13 (1). He also contended that this was not an alteration or re-erection within the meaning of Section 13 (5), inasmuch as the owner had erected eleven houses, each four stories high, with no back yards, on a site previously occupied by ten houses, each three stories high and each having a back yard. The case against No. 105 was taken as a test case, the Council contending that the decision in such case would govern each of the remaining ten houses of the block.

Mr. Arthur Crow, District Surveyor for Spitalfields, was then called, and stated that the house in question was one of a row of eleven houses erected by Messrs. Davis Bros. in 1895, from plans prepared by Mr. H. H. Collins. The site of the present houses was formerly occupied by ten houses, each of three stories, and having yards at the rear. The plans of those old houses were duly certified by him, in accordance with Section 13 (5) of the Act. (The certified plans were then put in evidence.) He examined the plans of the new buildings, and approved them, on the understanding that the houses were not designed for persons of the working class. The accommodation shown by Mr. Collins' plans included a shop and back room on the ground floor, and three floors over, with two rooms on each floor. The buildings were duly proceeded with and inspected by him from time to time. On January 23, 1896, he found that six houses had been roofed in, and were being fitted up for occupation—that in each house the back rooms on each floor were prepared to receive ranges, and that in No. 107 ranges had been fitted on the ground and first floors. On January 24 he served notices of irregularity, which were produced, objecting to the houses under Secs. 13 and 41, on the ground that they were being adapted for working-class dwellings. In reply he received a letter from Mr. Collins, which he produced, stating, *inter alia*, that, "as you must be aware, these buildings have never been erected for, nor are they intended for, the occupation of the artisan and labouring classes." Thereupon he consulted the Council's advisers, and, having regard to that letter, no action was taken. In October last his attention was called to the houses, and he inspected them and found that they were sublet to various sub-tenants. Dealing with No. 105, the whole house was let by Mr. Davis to Israel Cohen, a working clockmaker, at 2*l.* a week, who, with his wife and family, occupied the ground floor. Each floor above was sublet by Cohen to a separate family at 8s. 6d., 8s., and 6s. a week respectively. Each sub-tenant was a cabinet maker by trade. He put in a plan, showing the house as at present existing.

In cross-examination by Mr. Marshall Hall, who appeared for Mr. Davis, witness said, assuming the house not to be a working-class dwelling, it did not infringe the Act as regards the line on which it fronted, but the party walls were not coincident with the old party walls; that he made a return to the Council of the houses when they were roofed in; that he had been paid his fees as District Surveyor; that he thought the house was adapted for persons of the working class because it and the others in the block were so occupied.

Mr. Thomas Blasbill, Superintending Architect of the London County Council, said that he had seen the house in question; that Brick-lane was a highway; that the Council had given no consent to the building, which was inside the prescribed distance.

In cross-examination witness said that if the Council's views were correct a very large number of East End houses and some West End houses in poor class neighbourhoods would be affected by it.

Inspector Harvey, of the Whitechapel District Board of Works, said he had inspected the houses on several occasions. He confirmed the District Surveyor as to the occupation, and added that in No. 111 the two upper floors (four rooms) were occupied by a man to whom they were sublet at 15s. per week, with his wife and three children and ten lodgers. At No. 115 there were three single room sub-tenancies, two by a laundress and an office charwoman, each paying 3s. 6d. a week rent.

In reply to the Magistrate he said the cooking in the upstair rooms was done at open stoves. There were two water-closets in each house.

Dr. Loane, Medical Officer of Health for Whitechapel, said he had visited the houses, and he produced some photographs of them.

The tenant Cohen and one sub-tenant were called and corroborated as to rents and occupations.

The tenancy agreement with Cohen was produced together with his rent-book, containing rules to be observed by the tenants.

The Magistrate in giving judgment, with out calling on Mr. Marshall Hall, said:—"The question I have to decide is whether the houses are within the meaning of Section 13 (5) of the Building Act, 'dwelling houses to be inhabited or adapted to be inhabited by persons of the working class.' If they are, they are within the prescribed limits and must be set back. If they are not they may remain. There is nothing to guide me as to what is meant by 'persons of the working class, except Section 75 of the Housing of the Working Classes Act, 1890. If this is to be a guide, it is a money guide—viz., an annual rent of 20*l.* for a house or part of a house. I must, however, look at the facts of the case. I need not go through the various sections, since the parties agree that what I have to decide is whether this house is a house to be inhabited or adapted to be inhabited by persons of the working class. I should mention the South-Eastern Railway Company's Act of 1896." (The magistrate then read the section which is quoted above.) "That section seems as if, after exhausting every class named therein, any one else earning less than 30s. a week was of the labouring class. The person to whom this house is let is Cohen, at a rent of 2*l.* a week. He is a watchmaker, and occupies the ground floor. Above are first and second floors, and a floor in the roof. The house is set out as a house would be in Piccadilly if designed for a shop with living rooms over. How could you erect differently a shop with living rooms over? I must not look at the passing character of the tenants, but at the house. Every place of bricks and mortar can be lived in by persons of the working class if they can afford it. Cohen has grossly overcrowded his premises, which are occupied by persons who work with their hands for their daily bread, but that cannot alter the intention of Davis when he built the house—it cannot alter the character of the house. The Legislature intended houses for persons of the working class to have a reasonable provision of air-space in front, because more people live on the premises. Davis says 'I don't want the working class.' I must find that these houses are not houses to be inhabited or adapted to be inhabited by persons of the working class. The people living there are, in my judgment, persons of the working class. Many rooms are occupied by persons—strictly and accurately described as persons of the working class."

The summons was accordingly dismissed with ten guineas costs, the magistrate expressing his readiness to state a case for the superior court. The defendant's counsel said that defendant would himself like to have a case stated.

LONDON COUNTY COUNCIL *v.* FAULKES.

MR. D'EYNCOURT gave his decision on the 23rd inst. at the North London Police-court in the case of the "London County Council *v.* Faulkes." The defendant in this case is the freeholder of the Willows Estate, Park-lane, Stoke Newington, and he was summoned at the instance of the County Council for forming and laying out a road on the north side of Carysfort-road, which did not communicate at each end with public carriage-ways, without the consent of the Council. The case was argued a fortnight ago, Mr. Chilvers appearing for the Council, and Mr. Macmoran, with him Mr. Salter, for the defendant. It was admitted that prior to the London Building Act of 1894 the defendant could have laid out the new street in the way he proposed, but this Act of Parliament made it necessary that a new street should communicate with public carriage-ways at each end, and that the consent of the Council must also be obtained. The defence raised was that the new street had been commenced prior to the Act of 1894 coming into operation. The evidence showed that openings were left in the line of houses in Carysfort-road when they were put up in 1894, and that the flank walls of the houses abutting on these openings were finished off as corner houses, and that the garden fences were made as outside fences would be. It was also alleged for the defence that the spaces through the openings had been partly made up as "builder's roads" in 1894. On the other hand, it was said that the openings had simply been left and boarded up, and that so far from the proposed roadways being made up, the opening had simply been used for the storage of hard core, &c., for use in the making up of Carysfort-road. No attempt to lay out the new street was made until November last.

In giving his decision, Mr. d'Eyncourt said that there could be no doubt that if the present Building Act had been in force a hundred years ago, London would have been a much finer place than it is now. The question, however, for him to decide was whether the present work had been commenced before the Act of 1894 came into operation. There was no doubt that the plans were sent in before that time, and those plans contained a spur street which the defendant did not press, and to which the Council had a right to object. The Council, however, offered the defendant no assistance in the matter, as they only sent an indefinite objection, which the defendant might naturally take to apply only to the spur street. Without the spur street the circumstances were identical with those existing in the case of "The London County Council *v.* Edmondson" (decided by the judges against the Council), and he concurred in al that the judges had said in that case. As in that case, the new street was to be made in crescent form, both ends coming into one carriage-way. Was this new street commenced before the end of 1894? He should hold that it was, for the reasons as stated in the evidence that the four corner houses were finished as corner houses, and the garden fences were a foot higher than those between the ordinary gardens. It was clearly the intention of the defendant to lay out the new street when he was building Carysfort-road early in 1894. Under these circumstances he should dismiss the summons.

Mr. Salter asked for costs, saying that the defence had cost 30 guineas. They asked the magistrate to grant 15 guineas costs.

Mr. d'Eyncourt granted 12*l.* 12s. costs.

Mr. Chilvers asked the magistrate to state a case for the superior Court.

Mr. d'Eyncourt said he would consider the application.—*Morning Advertiser.*

BUILDING TRESPASS IN CHEAPSIDE:

ACTION IN THE CHANCERY DIVISION.

MR. JUSTICE NORTH, in the Chancery Division, on the 23rd inst., delivered a considered judgment in the case of "The Aerated Bread Company *v.* Shepherd," it being an action brought by the plaintiffs, the lessees of No. 51, Cheapside, for an alleged trespass in connexion with work done in rebuilding the adjoining premises, No. 52, Cheapside, by the owner, the defendant. It appeared that the wall between the premises, Nos. 51 and 52, Cheapside, was a party-wall within the meaning of the Metropolitan Building Acts, the matter in dispute being whether the wall was a party-wall in the sense that there was a common ownership, or whether the wall was, as the learned Judge held, entirely the property of the plaintiffs, subject to easements of supports. A question was also raised on the construction of the London Building Act, 1894, Section 64 (18), which provides that all chimney-flues are to be surrounded by new brickwork of a certain thickness, the defendant having put chimney-flues against the plaintiff's party-wall. These flues were constructed of actual new brick on three sides only. The two ends were bonded into the party-wall, the face of the party-wall itself forming the fourth side of the flue. The plaintiffs alleged that the London Building Act of 1894 had not been complied with; but the defendant's expert witnesses, on the contrary, asserted that in their opinion it had, because the party wall, being sound and in good condition, was to be considered new brickwork within the meaning of the Act.

His Lordship, in giving judgment, said that he considered this construction of the statute to be absurd, and held that the defendant had not complied with the Act, which required the brickwork to be new at the time of the construction of the flues, although the District Surveyor had passed the work. He did not, however, consider it necessary, in the circumstances, to grant a mandatory injunction. His Lordship having decided the main issues in favour of the plaintiffs, gave them the general costs of the action.

Order accordingly.

Mr. Swinfen Eady, Q.C., and Mr. W. F. Hamilton appeared as counsel for the plaintiff company; and Mr. Cozens-Hardy, Q.C., and Mr. Ingle Joyce for the defendant.

MEETINGS.

FRIDAY, MARCH 26.

Institution of Civil Engineers (*Students' Meeting*).—Mr. W. J. Griffiths on "The Re-Signalling of the Liverpool-street Terminus of the Great Eastern Railway." 8 p.m.

SATURDAY, MARCH 27.

Sanitary Institute (*Demonstrations for Sanitary Officers*).—Inspection at Harrison & Barber's Knacker Yard, Whitechapel. 3 p.m.

London and Provincial Builders' Foremen's Association (*Memoral Hall, Farringdon-road, E.C.*).—Mr. F. Chessell on "Technical Education." 7 p.m.

Edinburgh Architectural Association.—Visit to Hatton House, Midlothian.

MONDAY, MARCH 29.

Royal Institute of British Architects.—Mr. J. A. Gotch on "Heraldry of the Renaissance in England." 8 p.m.

Society of Arts (*Cantor Lectures*).—Professor W. Chandler Roberts-Austen on "Alloys." III. 4.30 p.m.

Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. J. Priestley on "Ventilation, Warming, and Lighting." 8 p.m.

Leeds and Yorkshire Architectural Society.—Annual Report to be read, and Officers elected. 7.30 p.m.

TUESDAY, MARCH 30.

Society of Arts (*Applied Art Section*).—Mr. W. R. Lethaby on "Lead-Work." 8 p.m.

Institution of Civil Engineers.—Mr. Henry W. Ravenshaw on "Electric Lifts and Cranes." 8 p.m.

Auctioneers' Institute.—Mr. E. J. Harper on "Some Effects of the Incidence of Rates upon Landed Property." 8 p.m.

WEDNESDAY, MARCH 31.

Society of Arts.—Mr. G. L. Hillier on "Cycling—Historical and Practical." 8 p.m.

Builders' Foremen and Clerks of Works' Institution.—Quarterly meeting of the Directors. 8 p.m.

Sanitary Institute (*Demonstration for Sanitary Officers*).—Inspection in the Parish of St. George's, Hanover-square. 2 p.m.

Liverpool Engineering Society.—Mr. Joseph Corbett on "Sewage Sludge Removal and Shipment." 8 p.m.

THURSDAY, APRIL 1.

Society of Antiquaries.—8.30 p.m.

Sanitary Institute (*Lectures for Sanitary Officers*).—Mr. J. Wallace Peggs on "Principles of Calculating Areas, Cubic Space, &c., Interpretation of Plans and Sections to Scale." 8 p.m.

Institution of Civil Engineers.—Students' Visit to the Generating Station of the City of London Electric Lighting Company, Bankside, S.E. 2.30 p.m.

FRIDAY, APRIL 2.

The Architectural Association.—Mr. T. G. Jackson, R.A., on "Architecture in Relation to the Crafts." 7.30 p.m.

Royal Institution.—Mr. C. T. Heycock, M.A., on "Metallic Alloys and the Theory of Solution." 9 p.m.

Institution of Junior Engineers.—Paper to be read and discussed:—"Cycle Construction," by Mr. A. W. Marshall. 8 p.m.

SATURDAY, APRIL 3.

Sanitary Institute (*Demonstration for Sanitary Officers*).—Inspection at Aylesbury Dairy Company's Premises, Bayswater. 3 p.m.

Sanitary Inspectors' Association.—6 p.m.

British Institute of Certified Carpenters.—Special Meeting at Carpenters' Hall, at 6 p.m. Paper by Mr. T. M. G. Lloyd on "Ancient and Historical Carpentry."

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

4,105.—PUG MILL FOR BRICKS, &c.: *D. Doyle and Another.*—The several improvements claimed by inventor, consist in (1) lubricating the interior surface of the cylinder and hopper head or conical end, as well as the surface of the propeller with water in a manner somewhat like the die is at present lubricated. For this the lubricating cloth may be covered with a plate or plates of metal; (2) the fixing one, two, or more plates at the end of the pugs mill so that they may just graze the end of the propeller, so that when the clay is revolving, plate or plates take it off the end; (3) in using a die 9½ by 9½, instead of 9½ by 4½, and splitting the double column by a wire fixed transversely on the die; (4) by a carriage of steel rope stretched transversely across the die. This carriage moves on a horizontal line backwards and forwards to and from the pug end, telescope-like outside the die frame.

5,310.—LAVATORY AND WATER-CLOSET APPARATUS: *J. Hulse.*—In order to obtain a combination lavatory, water-closet, urinal, and slop sink, inventor adopts a pedestal closet, with a hinged seat to fold back, so as to be used for urinal or slop sink. On the back of the fixed portion of seat a trough is provided to receive contents of lavatory basin when emptied. Inventor makes lavatory hinged at back to fold upwards, when water-closet is to be used, and to be there secured by springs. Separate supply cisterns, with overflow pipe, are provided.

8,531.—CHIMNEY POT OR VENTILATOR: *H. W. Swain.*—The chimney pot or ventilator, constructed as a fixture, is made in chambers on an obtuse angle, the flueway or shaft tapering downwards. Around the basal portion of each obtuse-angled chamber is a series of round apertures. The base of the ventilator, or pot, is square, and on each side of the square base an opening is formed, the whole arrangement being conducive to driving the smoke or hot air upwards.

10,037.—GULLEY TRAPS: *J. Richards.*—Inventor claims (1) a gully trap, having the cover consisting of a movable grated part and a fixed part, provided with an aperture or apertures for extending into the trap a fall pipe or pipes, receiving water from gutters or other sources; and (2) in relation to a gully trap, the method of delivering waste water from a fall pipe, &c., into the trap below its cover, by extending pipe or pipes through a suitable aperture or apertures.

26,331.—DRAIN PLUG AND HOPPER FOR TESTING DRAINS IN SECTIONS: *W. Neighbour.*—Inventor adopts a drain plug with enlarged waterway, provided with an air escape tube, with cup, also a galvanised hopper, detachable. It is claimed that this will obviate the old method of puddling with clay for bends for the purpose of testing drains in sections with water.

29,437.—PAVEMENT LIGHTS: *J. A. Willmore.*—Inventor claims (1) the application and use of tiles or plates, either solid or perforated, composed of lead or other suitable metal or alloy, in combination with glass and cement, or asphalt, to form the top surface of pavement lights, &c., and (2) the application of bars with projecting pins made of suitable metal in combinatiou with glass and cement or asphalt for same purpose. As none of the iron frame, except its outside edge, comes within a certain distance of the top surface, the tendency of pedestrians to slip on pavement lights, cellar flaps, coal plates, &c., is greatly reduced.

29,916.—FIRE GRATES: *G. C. St. John.*—(1) A grate in the nature of a warped and woofed reticulated metal structure; (2) the same with a reinforcing rim surroundiug grate; (3) the same, comprising an open-work body portion and a frame surrounding it; (4) the same, and a frame cast integral therewith; (5) a similar grate and rim, the latter constituting the perimeter of the grate, the grate being substantially a plane surface freely exposed underneath; (6) a similar grate of interlaced wires, &c., with frame, the combined area of the draught-spaces being greatly in excess of the metal presented to the direct action of the heat, whereby a strong upward draught will be generated and durability secured; (7) a similar grate, having raised portions at the air openings constituting fuel supports; and (8) an endless travelling grate, constituting a plurality of open-work grate surfaces, with a frame enclosing each.

NEW APPLICATIONS FOR LETTERS PATENT.

MARCH 8.—6,060, A. Rider and E. Russell, Sliding Sash Windows.—6,066, The Wilkinson Sword Co., Ltd., Door Locks.

MARCH 9.—6,113, F. Lynde, Flushing Cisterns.—6,121, J. Taylor, Removing Steam and Vapours from Buildings, and for Promoting Ventilation, applicable also for the prevention of down draught in chimneys.—6,159, T. Bainbridge, Ladder Grip and Scaffold Rest.—6,138, J. Skinner, Chimney Ventilating Cowls, &c.—6,143, J. Smith, Self-Locking Window Sash Fastener.—6,171, L. Hanks, Gulley Traps.—6,191, J. Noel, Chimney and Ventilator Tops.—6,216, W. Hughes, Machines for Marbling Paper.—6,224, E. Taylor, Sash Fasteners.

MARCH 10.—6,239, W. Phillips, Combined Stay and Fastener for Sliding and Reversible Windows.—6,242, J. Vidal, Flushing of Water Closets.—6,275, W. Edwards and E. Runtz, Flooring and Floor Construction.—6,300, F. Chapman, Blocks for Paving Wood.—6 310 W. Gardiner, Window Fastener.—6,324, T. Sanderson, Manufacture of White Lead.—6,328, A. Henström, Ventilating and Air Exhausting Apparatus.

MARCH 11.—6,347, A. and J. Moore, Equable Firing Kilns.—6,384, J. Ralls, Noiselessly Filling Flushing Cisterns, &c.—6,385, J. Ralls, Discharging Apparatus connected with Flushing Cisterns, &c.—6,413, D. and J. Bumess, Concrete Paving, &c.—6,426, F. Golby, Door Hinges.—6,459, W. Reid and F. Crosland, Lime or Cement Kilns.—6,467, H. Lake, Moulding Block for Forming Plates for Building Purposes.—6,468, J. Oldham, Saws.

MARCH 12.—6,509, H. Sowcroft, Saw Blades for Sawing Stone.—6,522, E. Wollard, Ventilating Gear for Greenhouses.—6,524, F. Daw, Casement Fastening.—6,526, C. Armstrong, Buffers and Fittings of Automatic Tilting Tanks for Waste Water-closets.—6.577, S. Buck, Ridge Tiles, &c.—6,579, G. Stiehle, Floors or Flooring.

MARCH 13.—6,590, J. Davis and Others, Sanitary Pipe Machines.—6,643, J. Rendle, Roof Glazing.—6,649, D. Campbell, Handles and Spindles of Door Locks.—6,654, J. Johnson, Water-closets.—6,657, A. Parnacott, Water-Waste Preventers.—6,676, J. Westhead, Combined Plumber's or Soldering Iron, and Lamp for Heating same.—6,693, A. Testas, Band Sawing Machines.

PROVISIONAL SPECIFICATIONS ACCEPTED.

2,550, J. Robertson, Dove-tailed Wooden Structures, &c.—2,808, W. Dawson and A. Burn, Rule Saw.—4,199, H. Barnett, Casement Windows.—4,295, A. Muirhead, Glasgow, Fire Grates.—4,383, A. Bucknall, Constructing Portable and other Wooden Buildings, also applicable to Floors and other parts of Buildings of any kind.—4,658, J. Hussey, Plumbers' Pots, &c.—4,681, W. Prestwich, Door Spring.—4,745, J. Feare, Ventilators.—4,960, E. Codling, Drain Pipes.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

7,059, J. Hamilton, Roof Ladders and Staging.—9,363, E. Laroche, Stoves.—9,518, E. Palmer, Reaching by a Lateral Movement Elevated parts of Buildings and other Erections for the purpose of Repairing such Building and other erections, and for Painting, &c.—12,324, F. Price, Flushing Cisterns.—23,731, J. Elrick, Chimney-top Smoke Preventer and Extract Ventilator.—25,521, R. Birtley, Drain Pipes and Traps.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

MARCH 11.—By Fenn & Co. (at Dedham).

Dedham, Essex.—Burkett's-road, &c., enclosure of land, and two tenements, 37 a. 1 r. 29 p., c. ... £1,000
Cooper's-lane, "The Park Farm," 16 a. 3 r. 28 p. c. ... 540
Enclosure of land, 8 a. 0 r. 26 p., c. ... 280
A House and 10 a. 3 r. 31 p., c. ... 300

By W. THOMSON (at Douglas).

Douglas, Isle of Man.—Falcon Cliff Castle Hotel, Pavilion, and Race Ground: also a residence called "Fernleigh," total area, 7 a., f. ... 9,000
Santon, "The Ballacorris Estate" comprising 60 a. 3 r. 19 p., f. ... 1,225

March 15.—By E. H. HENRY.

Clapham.—18, Lynette-av., u.t. 88 yrs., g.r. 11*l.* 11s. e.r. 45*l.* ... 425
168 and 170, Clapham Park-rd., f., e.r. 86*l.* ... 1,165

By MONTAGU & ROBINSON.

Woodford.—1 and 2, Park-villas, f., r. 33*l.* 12s. ... 355
Plaistow.—15 to 25 (odd), Florence-st., u.t. 78 yrs., g.r. 13*l.* 10s., r. 101*l.* 8s. ... 650

By NOKES & NOKES.

Hoxton.—6, White Horse-court, u.t. 80 yrs., g.r. nil, r. 26*l.* ... 190
Bow.—144 and 146, Turner's-rd., u.t. 60 yrs., g.r. 20*l.*, r. 71*l.* ... 305

By F. WARMAN.

Stoke Newington.—King Henry's-walk, f.g.r. 48*l.*, reversion in 25 yrs. ... 1,820
Mildmay-pk., f.g.r. 5*l.*, reversion in 55 yrs. ... 215
Mildmay-st., f.g.r. 9*l.*, reversion in 55 yrs. ... 360

By Messrs. SPELMAN (at Norwich).

Norwich.—Aylsham-road, a residence, and 2 a. 0 r. 5 p., u.t. 55½ yrs., g.r. 16*l.* ... 1,040
14, Newmarket-rd., u.t. 18½ yrs., g.r. 2*l.* ... 530

March 16.—By W. B. HALLETT.

Islington.—4 to 12 (even), Grosvenor-st., u.t. 50¾ yrs., g.r. 25*l.*, r. 161*l.* 4s. ... 550

By DEBENHAM, TEWSON, & Co.

Shoreditch.—39, Bethnal Green-rd., f., r. 90*l.* ... 1,910
Clerkenwell.—15, Wilmington-sq., u.t. 19 yrs., g r. 4*l.*, r. 60*l.* ... 350

By FORTESCUE & Co.

Wandsworth.—177, 179, and 181, St. John's Hill, u.t. 56 yrs., g.r. 30*l.*, r. 101*l.* ... 905
17 to 31 (odd), Ram-sq., u.t. 66 yrs., g.r. 18*l.* ... 820
37, North-st., u.t. 38 yrs., g.r. 12*l.* 18s., r. 75*l.* ... 850

By RUTLEY, SON & VINE.

Haverstock Hill. 33, Crogsland-road, u.t. 70 yrs., g.r. 1*l.* ... 555
Holloway.—81, 119, and 121, Sussex-rd., u.t. 55 yrs., g.r. 18*l.* 18s., r. 102*l.* ... 980

By HARDS & BRADLY (on the premises).

Lee Green.—250, High-rd., and a bu lding plot adjoining, 1 r. 2 p., u.t. 85 yrs., g.r. 25*l.*, with goodwill ... 325

By HAMPTON & SONS (on the premises).

Mayfair.—53, Berkeley-sq., beneficial lease for 5¼ yrs., r. 70*l.* ... 1,000

By ORGILL, MARKS, & ORGILL (At Masons' Hall Tavern).

Marylebone.—York-st., "The Royal Oak" p.-h., lease for 21 yrs., r. 100*l.*, with goodwill ... 17,600
Lewisham.—Loampit Vale, the "Crown Brewery," lease for 20½ yrs., with two tied houses ... 1,450

March 17.—By H. E. FOSTER & CRANFIELD.

Kensal Green.—Hiley-rd., f.g.r. 25*l.*, reversion in 92 yrs. ... 685
Stanley-ter., f.g.r. 20*l.*, reversion in 92 yrs. ... 540
Fulham.—Lillie-rd., f.g.r. 35*l.*, reversion in 92¼ yrs. ... £1,025

By E. W. RICHADSON & SON.

Stoke Newington.—31 and 33, Clissold-rd., u.t. 51 yrs., g.r. 15*l.* 10s., r. 100*l.* ... 1,035

By R. TIDEY & SON.

Dalston.—10, Middleton-rd., u.t. 40 yrs., g.r. 5*l.* r. 40*l.* ... 295
De Beauvoir Town.—8, Derby-rd., u.t. 22 yrs., g.r. 5*l.*, r. 30*l.* ... 115
Islington.—3, Canonbury-rd., u.t. 21½ yrs., g.r. 6*l.*, r. 40*l.* ... 200
Hornsey.—130, Hornsey Park-rd., u.t. 83 yrs., g.r. 5*l.* 10s., r. 24*l.* ... 190

By RUSHWORTH & STEVENS.

Soho.—9, Denmark-st., f. ... 1,700
Piccadilly.—11 Albany, u.t. 35 yrs., g.r. 35*l.* ... 285
Pimlico.—11, Grosvenor-cottages, u.t. 26¾ yrs., g.r. 7*l.*, r. 31*l.* ... 210
Paddington.—5, Bouverie-st., u.t. 33¼ yrs., g.r. 7*l.* 10s., r. 50*l.* ... 390
Bouverie-st., "The Little Western," B.-h., u.t. 35½ yrs., g.r. 6*l.*, r. 63*l.* ... 870
61, Star-st., u.t. 35½ yrs., g.r. 4*l.* 4s., r. 45*l.* ... 505

By E & S. SMITH.

Kentish Town.—32, 36, 38, and 40, Charlton Kings-rd.; also l.g.r. 5*l.* 10s., u.t. 43¾ yrs., g.r. 27*l.* 10s. ... 740
Islington.—2, 3, and 4, Newhall-st., u.t. 33 yrs., g.r. 12*l.* ... 285
Stoke Newington.—3, 4, 6, and 8, Elton-st., and 63, King Henry-st.; also l.g.r. 16*l.*, u.t. 46 yrs., g.r. 16*l.* ... 655
Hornsey.—8 and 10, Holland-rd., u.t. 72 yrs., g.r. 12*l.* ... 275

By E. TOMPKINS.

Bexley Heath.—61, Lion-rd., u.t. 80¾ yrs., g.r. 6*l.*, r. 30*l.* ... 205

By LOUND & HOWITT (at Masons' Hall Tavern).

Mile End.—Mile End-rd., The "White Horse" P.-h., lease for 33 yrs., r. 150*l.*, with goodwill ... 14,070
Mitcham.—London-rd., "The Buck's Head," f., with goodwill ... 11,550

By RENDELL & SYMONS (at Newton Abbot).

Denbury, Devon.—The "Shute" Estate, 28 a. 1 r. 18 p., f. ... 2,500

By BISHOP & PRITCHETT (at Swindon).

Swindon, Wilts.—28, 30, and 32, Wood-st., f., r. 17*l.* ... 3,000
Gorse-hill, enclosures of building land, about 4 a. 2 r. 17 p., f. ... 4,546
199 to 202, Cricklade-rd., u.t. 87 yrs., g.r. 6*l.* 6s. ... 520
207 and 208, Cricklade-rd., f. ... 355
Lower Stratton, Wilts.—Enclosures of land, about 3 a., f. ... 250
Shrivenham-rd., a paddock of 2 a., f. ... 134
Wroughton, Wilts.—"Castle Cottages," f., e.r. 14s. 6s. ... 100

March 18.—By CRASKE & SONS.

Tooting.—4 and 6, Brightwell-cres., f., r. 41*l.* 12s. ... 300

By DAVIS & BARROW.

Barnes.—1, Mill Hill-rd., f., e.r. 65*l.* ... 850

By H. HOLMES & Co.

Marylebone.—24, Upper Charlton-st., u.t., 32 yrs., g.r. 24*l.* ... 460
Kentish Town.—10 and 18, Dickinson-st., u.t. 70 yrs., g.r. 12*l.*, r. 64*l.* ... 600
Harrow. — Roxborough-pk.-rd., four plots of land, f. ... 500

By NEWBON, EDWARDS & SHEPHARD.

Hornsey Rise.—Lambton-rd., &c., f.g.r. 45*l.*, reversion in 81 yrs. ... 1,300
Holloway.—5, Yerbury-rd., u.t. 70½ yrs., g.r. 8*l.* 10s., r. 45*l.* ... 445
18, Queensland-rd., u.t. 42 yrs., g.r. 15*l.* ... 120
Peckham.—54, 56, and 58, Langdale-rd., u.t. 46 yrs., g.r. 12*l.* ... 650
Chalk Farm.—12, 13, and 14, Haverstock-st., u.t. 80 yrs., g.r. 18*l.* ... 380
21, Ferdinand-pl., u.t. 80 yrs., g.r. 4*l.* ... 120
34, Ferdinand-st., u.t. 80 yrs., g.r. 6*l.*, r. 24*l.* ... 200

By A. PREVOST & SON.

Mile End.—41 and 42, Ely-ter., u.t. 12½ yrs., g.r. nil ... 135
209 and 211, Bow Common-lane, u.t. 57 yrs., g.r. 3*l.* 14s. 6d. ... 365
Hackney.—75, Frampton Park-rd., u.t. 42 yrs., g.r. 6*l.*, r. 43*l.* ... 320
77, Frampton Park-rd., u.t. 42 yrs., g.r. 6*l.* r. 42*l.* ... 345
West Ham.—49, 51, 53, and 55, Portway, f., r. 76*l.* 14s. ... 650
Leytonstone.—Drayton-rd., "The Poplars," f., r. 52*l.* ... 630

By STIMSON & SONS.

Southwark.—33, 34, 35, and 36, Camelot-st., f., r. 105*l.* 6s. ... 1,000
Camberwell.—70, Southampton-st., f., r. 64*l.* ... 820
1 to 6, Canal Bank; 8 to 17, Canal-st., r. 231*l.* 8s.; also two building sites, area 16,000 ft., f. ... 2,860
Norwood.—Westow Hill, house, stabling, farrier's shop, &c., known as Windmill-yard, u.t. 88 yrs., g.r. 40*l.*, r. 147*l.* ... 800
Islington.—145, Downham-rd., u.t. 45 yrs., g.r. 5*l.*, r. 36*l.* ... 355
Orpington, Kent.—1 and 2, Oak-cottages, f. ... 230
1 and 2, Ash-cottages, f. ... 240
1 and 2, Fairlawn-cottages, and plot of land adjoining, f. ... 395
Farnborough, Kent.—1 and 2, Alma-villas, f. ... 410

By H. J. BLISS & SONS.

Bethnal Green.—4, Gauber-st., u.t. 28 yrs., g.r. 3*l.* 125
38 to 60 (even), Hereford-st., and 74 and 76, Sale-st., f., r. 260*l.* ... 2,620
25 and 29, Hague-st., f., r 48*l.* 2s. ... 670
19 to 29 and 35 to 45 (odd), Menotte-st., u.t. 28½ yrs., g.r. 6*l.* ... 990
14, Elwin-st., u.t. 25 yrs., g.r. 4*l.* 4s. ... 190
180 and 181, Barnet-grove, u.t. 26 yrs., g.r. 9*l.* ... 330
Bow.—29, Lyall-rd., u.t. 22½ yrs., g.r. 7*l.*, r. 44*l.* ... 460
Kingsland.—136, High-st., u.t. 70 yrs., g.r. 16*l.*, r. 60*l.* ... 670
Bethnal Green.—38 to 44 (even), Hamilton-rd., u.t. 41½ yrs., g.r. 21*l.* ... 320
Dalston.—66, Lansdowne-rd., u.t. 51½ yrs., g.r. 2*l.*, r. 26*l.* ... 300
Hackney.—267, Hackney-rd., u.t. 94½ yrs., g.r. 27*l.* 10s. ... 185
Victoria Pk.—18, Bonner-rd., u.t. 48 yrs., g.r. 4*l.*, r. 32*l.* ... 320

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Plans for Sewage and Sewage Disposal	Langport R.D.C. ..	20*l.* first and 10*l.* second	April 10
*Design for Monument to Right Hon. E. Stanhope, M.P.	Committee, 2, Manor House-st. Horncastle	10*l.* and 5*l.* for detailed drawings, &c.	April 16
*Design for Extension to Church.....	Murrow, 2, Finsbury-square, E.C.	10*l.*	April 30
*Designs for Institute and Free Library	Tonbridge U.D.C.	30, 20, and 10 guineas	May 15
*Designs for School	Chesterfield Sch. Bd.	.....	No date

CONTRACTS.

Nature of Work or Materials	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Church, House, and Stables	.....	Smith, Broderick, & Lowther, 77, Lowgate, Hull	Mar. 29
Six Houses, School-lane, Walton-le-Dale, Lancs	School Lane Co-op. Soc.	F. E. Dixon, Archt. Bank-chambers, Preston	Mar. 30
Baptist Chapel, Barry Dock, South Wales	.....	E. J. Williams, Archt. 14, High-street, Cardiff ..	do.
Pair Semi-detached Houses, Shay-lane, Ovenden, Yorks	....	Medley Hall, Archt. 29, Northgate, Halifax.....	do.
Church Tower, Sutton, St. Helen's, Lancs	.....	Wright & Sons, Surv. Lancaster	do.
Pipe Sewers, &c. Oatland's Estate, Harrogate	.....	Martin & Fenwick, 1, Park-place, Leeds , ...	Mar. 31
Six Houses, Newport-road, Middlesbrough.....	.....	R. Lofthouse & Sons, Archt.	do.
Additions to Schools, Modbury, Devon	Modbury School Board	J. W. Harris, School Board Offices	do.
Paving, Flagging, &c. Grayburn-lane	Beverley Corp.	Boro' Surv. Guildhall, Beverley	do.
Sewering, &c. (various streets).....	Birkenhead Corp	C. Brownridge, C.E. Town Hall	do.
Broken Granite and Slag	Branston(Lincs)R.D.C.	W. B. Danby, Clerk, 2, Bank-street, Lincoln.. ..	do.
Caithness Flags Paving	Dumbarton (N.B.) Police Commrs. ..	J. T. Babtie, C.E. 37, Church-st. Dumbarton ..	do.
*Infirmary.....	Wallingford (Berks) Union	C. Smith & Son, 164, Friar-street, Reading ..	do.
Additions to Business Premises Cleveland-street, Middlesbrough..	Mr. Sawer.....	R. Lofthouse & Sons, Archt. Middlesbrough ..	do.
Additions to Station Buildings, Nairn and Pitlochry ... , ...	Highland Ry. Co.	W. Roberts, Engr. Inverness	April 1
Additions to Clifton Mills, Bailiffe Bridge, near Brighouse, Yorks....	.....	J. F. Walsh, Archt. Lancs. & Yorks. Bank-chambers, Halifax	do.
Six Stables, Foundry-street, Ovenden	....	E. C. Morley, Archt. Fountain-street, Halifax.....	April 2
Villa, Rawtenstall, Lancs.....	.....	F. J. Hobson, Archt. Victoria-buildings ..	do.
Eight Houses, Cross Hall, Morley, Yorks	.....	P. Buckley, 36, Cliffe View, Bruntcliffe, Leeds	do.
Schools, Old Hill, Staffs.....	.....	Rev. H. G. Button, Old Hill	do.
*Cleansing and Painting.....	Midland Railway	Co.'s Archt. Cavendish House, Derby	do.
*Stabling and House, Stroud; Goods Shed and Additions, Haworth	do.	do.	do.
*Alterations, Workhouse	St. George-in-the-East Guardians	G. A. Wilson, Vestry Hall, Cable-street, E.	do.
Schools, Llan Wood.....	Pontypridd Sch. Bd.	A. O. Evans, Archt. Post Office-chmbrs, Pontypridd	April 3
Additions, &c. Stanfield Mills, near Halifax	W. Morris & Sons, Lim.	W. C. Williams, Archt. 29, Southgate, Halifax .	do.
School, Whitehill, Ballinamallard, Ireland	.....	Rev. G M'Meel, Presbytery Whitehill	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered
Electric Lighting Station, Westgate..	Wakefield Corp.	R. Porter, City Surveyor, Town Hall	April 5
Setts	Belfast Harbour Commrs.	G. F. L. Giles, Harbour Offices, Belfast	do.
Street Works, St. James's-street	Batley (Yorks) T C. ..	O J. Kirby Boro' Surv. Market-place.....	do.
Granite Road Metal	East Dereham R.D.C.	H. G. Himson, Surv. Theatre-st. E. Dereham	do.
*Kerbing, &c.	Hanwell U.D.C.	S. Barnes, Council Offices	do.
*Making-up Road	do.	do.	do.
*Repairs, Painting, Cleansing, &c.	St. Marylebone Guardians	The Steward, Infirmary, Rackham-st. Notting Hill, W.	do.
Police Station, Llanhilleth	Standing Joint Com.	W. Tanner, County Surv. Llanhilleth	April 6
*Wood Paving	Commrs. of Sewers ..	The Engineer, Guildhall	do.
*Kerbing, Channelling, &c. &c.....	Lewisham B. of Works	Surv. Dept. Bd. of Works Office, Catford, S.E.	do.
*Pipe Sewers	do.	do.	do.
*Making-up Roads	Tottenham U.D.C. ..	P. F. Murphy, 7-2, High-road, Tottenham.....	do.
*Making-up Roads	Southend-on-Sea Corp.	H. Harlock, Clarence-road, Southend	April 7
*Construction of Gallery on Pier.....	do.	do.	do.
*Church, Leicester.....	The Board.....	Everard & Pick, 6, Millstone-lane, Leicester ..	do.
*Alterations to House	Joseph Brutton	C. & C. B. Benson, Yeovil, Somerset..... ..	April 10
Hall and Institute, Mountain Ash, Glam	Reading Rooms Com.	W. Jones, Oakwood, Aberffrwd-d. Mountain Ash	April 12
*Casual Wards.....	Paddington Guardians	F. J. Smith, 17B, Great George-street, S.W. ..	April 13
*Engine and Boiler-House and Electric Lighting Buildings	County Borough West Ham	Lewis Argell, Town Hall, Stratford, E..... ..	do.
Infirmary at Workhouse	Redruth (Cornwall) Union Guardians....	Sampson Hill, Archt. Redruth	April 14
*Materials and Works for Sewers and Drains	Strand Bd. of Works	5, Tavistock-st. Covent Garden, W.C.	do.
Rebuilding St. David's Church, Gyfeillon, Llanwonno, Wales.....	Rev. L. L. Davies	E. M. B. Vaughan	April 15
Municipal Buildings, Oban, N.B.	.....	A. Shairp, Archt. Oban ..	do.
*Infirmary, Witham	South Metropolitan School District	F. Whitmore, 7, Duke-st. Chelmsford	April 19
*Main Drainage	Woking U.D.C.	Taylor, Sons, & Santo Crimp, 27, Gt. George-street, S.W.	April 22
*Town Hall and Municipal Offices	Chatham Corporation	G. E. Bond, High-street, Rochester	April 26
Hotel, Newquay, Cornwall	.....	S. Trevail, Archt Truro ..	April 30
*Prison and Police Barracks, Cairo ..	Egyptian Government	Service Administratif Offices, Cairo	May 3
*Timber-framed Bungalow.....	.....	F. Bath, Crown-chambers, Salisbury	No date
House and Stables, Stoke Gabriel, Devon	.....	W. Taprell Allen, Archt. Kingswear	do.
Three Shops, Leeming-street, Mansfield, Notts	A. J. Cursham	W. Andrew, Archt. Parkstone, Dorset..	do.
Roads and Sewers, Palewell Estate, East Sheen, Surrey	H. S. Cross	F. H. Harvey, 183, Lavender-hill, Clapham	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Clerk of Works.....	London Asylums Committee	4*l.* 4*s.* per week	April 5
*Engineer and Surveyor	Borough of Burton-on-Trent	400*l.* per annum	April 6

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv. vi. viii. & xxi *Public Appointments, pp.* xviii. & xxi.

20, Approach-rd, u.t. 56¾ yrs., g.r. 6*l.*, r. 35*l.* £405
Hackney.—18, Kenton-rd., u.t. 40 yrs., g.r. 3*l.* 7*s.*, r. 36*l.* 270

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	8/0/0	0/0/0
Teak, E.I....load	11/10/0	16/10/0
Sequoia, U.S.ft.cu.	1/9	2/0
Ash, Canada load	3/0/0	4/5/0
Birch, do.	3/10/0	5/5/0
Elm, do.....	3/15/0	5/0/0
Fir, Dantsic, &c..	2/15/0	4/15/0
Oak, do.....	2/10/0	3/10/0
Canada	5/0/0	6/0/0
Pine, Canada red	0/0/0	0/0/0
Do. Yellow	2/0/0	4/0/0
Lath, Dantsic, fath	4/10/0	5/10/0
St. Petersburg..	5/0/0	6/10/0
Wainscot, Riga, &c., log	2/5/0	4/10/0
Odessa, crown....	2/5/0	4/10/0
Deals, Finland 2nd & 1st std 100	9/0/0	9/10/0
Do. 4th & 3rd...	9/0/0	9/10/0
Do. Riga	7/10/0	8/10/0
St. Petersburg, 1st yellow... .	11/0/0	13/10/0
Do. 2nd yellow	10/0/0	11/0/0
Do. white	9/10/0	11/10/0
Swedish	9/0/0	16/10/0
White Sea.....	10/10/0	17/0/0
Canada, Pine 1st	20/0/0	23/0/0
Do. do. 2nd	14/10/0	16/10/0
Do. do. 3rd, &c.	7/0/0	10/10/0
Do. Spruce, 1st.	9/10/0	11/0/0
Do. do. 3rd and 2nd	7/15/0	9/0/0
New Brunswick	7/10/0	8/0/0
Battens, all kinds	5/0/0	20/0/0
Flooring boards, sq., 1 in. prep. 1st	0/9/0	0/16/0
Do. 2nd	0/7/6	0/12,6
Other qualities—	0/5/0	0/7/0
Cedar, Cuba, ft.	/4½	/5
Honduras, &c.	/4	/5
Mahogany, Cuba	/5	/6
St. Domingo, cargo av.	/4½	/5
Mexican, do. do.	/4	/5
Tobasco, do. do.	/5	/7
Honduras, do.	/5	/6½
Box, Turkey, ton	4/0/0	25/0/0
Rose, Rio.....	7/0/0	14/0/0
Bahia	6/0/0	25/0/0
Satin, St. Domingo.	0/0/7	0/1/0
TIMBER *(continued).*		
Satin, Porto Rico	0/0/7	0/1/6
Walnut, Italian ..	0/0/3	0/0/7
METALS.		
Iron—Pig, in Scotland .....ton	2/5/3½	0/0/0
Bar, Welsh, in London.....	5/15/0	5/17/6
Do. do. at works in Wales	5/10/0	5/12/6
Do. Staffordshire, in London.....	5/15/0	6/10/0
COPPER — British cake and ingot	53/5/0	53'15/0
Best selected ..	54/0/0	54/10/0
Sheets, strong..	59/0/0	60/0/0
Chili bars	49/12/6	0/0/0
YELLOW MTL lb.	0/0/5	0/0/5½
LEAD — Pig, Spanish ...ton	11/10/0	11/11'3
English com. brands	11/12/6	11/15/0
Sheet, English 6 lbs. per sq. ft. and upwards ..	12/16/3	0/0/0
Pipe.....	13/6/3	0/0/0
ZINC — English sheet.....ton..	20/10/0	0/0/0
Vieille Montagne	21/10/0	0/0/0
Spelter	17/2/6	0/0/0
TIN—Straits	60/1/3	0/0/0
Australian.....	61/10/0	62'0/0
English Ingots..	64/0/0	65/0/0
Banca.....	61/0/0	0/0/0
Billiton	59/15/0	60/0/0
OILS.		
Linseed .....ton	14/2 6	0/0/0
Cocoanut, Cochin	27/15/0	0/0/0
Do. Ceylon	24/0/0	0/0/0
Palm, Lagos.....	24/10/0	0/0/0
Rapeseed, English pale	27/10/0	27/15/0
Do. Brown	27/0/0	27/10/0
Cottonseed ref. ..	15/17/6	16/10/0
Oleine.....	18/10/0	19/10/0
Lubricating U.S.	0/6/3	0/7/6
Do. black	0/4/9	0/6/6
TAR — Stockholm barrel	22/0	0/0/0
Archangel.....	0/12/6	0/0/0
Turpentine....ton	20/15/0	0/0/0

TENDERS.

[Communications or Insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

ALLERTON (Yorks).—Accepted for the erection of a villa residence, &c., Pearson-lane. Messrs. Fairbank & Wall, architects, Craven Bank-chambers, Bradford. Quantities by the architects:—

Masonry.—T. Haigh, Allerton, Bradford	£1,175 0
Joinery.—W. G. Bogg, Manningham, Bradford..	468 0
Plumbing.—T. & K. Pratt, Daisy Hill, Bradford..	258 0
Plastering.—J. Throp, Great Horton, Bradford ..	149 0
Slating.—J. Smithies, ,, ,, ..	98 10
Painting.—Simpson Cockcroft, Allerton, Bradford	35 0

AMMANFORD.—For building a doctor's house, for Dr. Arthur Hughes. Mr. David Jenkins, architect, Llandilo:—

Jones & Davies	£1,180	Jones Brothers, Tyrdail, Ammanford*	£862
D. Jenkins	1,150	Lewis Davies	791

* Accepted.

ASHTON-UNDER-LYNE.—For erecting the Waterloo and Taunton Liberal Club. Mr. J. H. Burton, architect, 2, Guide-lane, Hooley Hill:—

For all trades except plumbing and glazing.

J. W. Williamson.....	£953 15	E. Kirby.....	£893 10
Thos. Dean	946 0	John Robinson.....	885 15
Edwin Marshall	936 10	Jabez Gibson & Son, Dukinfield (accepted)	870 0
C. Keswick	917 15		
Fitton & Bowness	915 0		

Plumbing and Glazing.

G. H. Coop	£48 10	Peter Mills	£45 0
G. Burrows & Co.....	48 0	H. C. Hobson, Ashton-under-Lyne*	42 18
Alfred Heald.....	47 10		

*Accepted.

BANGOR.—For alterations to the "Alma Vaults," High-street, Bangor, for Messrs. Greenall, Whitley, & Co.. Limited, Warrington. Mr. Richard Hall, architect, High-street, Bangor, N. Wales:—

Owen Morris.....	£799 0	Jones & Williams £690 0	
J. & R. Williams.....	745 0	Watkin Jones, Bangor*..	668 10

* Accepted.

BOSTON (Lincs).—For the supply of 12,290 tons broken granite, 1,110 tons slag, &c., for the Holland (Lincolnshire) County Council:—

	Tons.	
L. Sommerfeld, King's Lynn	1,500	Quenest Granite.
Groby Granite Company	8,870	Groby Granite.
Ellis & Everard, Tollington, near Stamford	470	Bardon Hill Granite.
Mountsorrel Granite Company.....	1,450	Mountsorrel Granite.
Ellis & Everard	1,110	Slag ex Wellingboro' furnaces.

BUCKFASTLEIGH.—For the erection of Young Men's Christian Association premises and masonic hall. Messrs. Norman G. Bridgman and Walter H. Bridgman, architects, Torquay, Paignton, and Teignmouth. Quantities by Mr. Vincent Cattermole Brown, of Paignton:—

R. Tozer & Son £1,686	0 0	Jackson & Son £815	10 0
E. Pike	997 17 6	G. Arscott	811 15 0
S. Blatchford	898 14 0	G. Arscott*	827 9 4
A. Wakeham	873 5 6	* Revised tender accepted.	

BUCKNALL.—For the provision and laying of the pipe sewers, the laying of the iron mains, construction of manholes and lampeyes &c., Bucknall Sewerage Scheme, for the Stoke Rural District Council. Mr. Lamer Sugden, Engineer, Miles Bank Chambers, Hanley. Quantities by the Engineer:—

	Doultons' Joints.	Clayed Joints.
W. Johnson	£7,012 5 9	£6,743 15 6
S. Warburton.....	6,303 14 8	5,631 19 8
Joseph Young	4,645 0 0	4,610 0 0
C. Cornes.....	4,500 0 0	4,052 0 0
Thomas Grace	4,428 0 0	3,840 0 0
F. Barke	4,118 0 9	3,427 2 6
Smith & Taylor.....	4,052 0 0	3,376 0 0
W. Moss & Son, Loughborough (accepted)	3 970 0 0	3,252 12 0

CARNARVON.—For the erection of school buildings, for the School Board. Mr. R. Lloyd Jones, architect, 14, Market-street, Carnarvon:—

D. Williams & Son.....£5,757		Geo F. Williams & Co. ..£5,287	
Rd. Jones	5 499	Owen Morris, Carnarvon*	5,219
Hughes & Stirling.....	5,394	* Accepted.	

COLCHESTER.—For the erection of a pair of semi-detached villa residences, Creffield-road. Mr. J. W. Start, architect, Colchester. Quantities by architect:—

Cook £1,634	0	F. Dupont £1,470	0
E West	1,514 0	W. Chambers.....	1,465 0
Girling & Coe	1 495 0	R. Beaumont	1,395 0
Saunders.....	1,483 0	Appleton & Smith	1,355 10

Amended Tenders.

Dupont £1,319	0	Appleton & Smith £1,232	0
W. Chambers.....	1,298 0	R. Beaumont, Lexden*	1,215 0
* Accepted.			

COOKHAM DEAN.—For the erection of thee pair of semi-detached cottages. Mr. J. H. Deacon, architect, Marlow:—

H. Harris £827	0	W. Harding* £855	0
C. W. Cox & Son	866 5	* Accepted.	

CROYDON.—For the erection of superstructure of block of five business premises, George-street, for Mr. F. R. Docking. Mr. A. Broad, architect, 3, High-street, Croydon. Quantities by the architect:—

Edwards & Medway £5 970		W. Smith & Son.....£5,545	
A. Hood	5,669	A. Bullock.....	5,540
Chessum & Son	5,659	J. Horrocks	5,495
E. J. Saunders	5,650	S. Page	5,475
E. P. Bulled & Co.	5,628	W. H. Lorden & Son	5,383
S. Hart .....~.....	5,610	D. W. Barker (accepted)..	5,345

DUNSTABLE.—For erecting shop, &c., Church-street, Dunstable, Beds., for Mr. L. Hoen. Mr. A. Wilkinson, architect, Luton:—

T. Tompkins £285		W. Goode £250	

CYMMER (Wales).—For the erection of offices, for the Glyncorrwg Urban District Council. Messrs. Lambert & Rees, architects, Bridgend. Quantities by architects :—

J. Davies	£1,057	Rowland & Lloyd	£890
T. Roberts	896	D. Lloyd, Cymmer, R.S.O., near Port Talbot*	890
E. Davies & Sons	895		
Rattary & Jenkins	892		

* Accepted.

[Architects' estimate, £893. 15s.]

GLANAMMAN.—Accepted for building a manager's house, for the Raven Tinplate Company. Mr. David Jenkins, architect Llandilo :—

Lewis Davies, Penygroes, Llandebie £532

[Lowest of three tenders.]

GLASS HOUGHTON (Yorks).—For the erection of school buildings, to accommodate 330 scholars, Cutskye, for the School Board. Mr. Geo. F. Pennington, architect, Bridge-street, Castleford :—

For the whole of the work.

Jackson Bros., Boothferry-road, Goole £2,548

HASTINGS.—For the restoration of No. 38, White Rock, for Mr. P. Arnold. Mr. Wm. Cooper, architect, 21, Havelock-road, Hastings. Quantities by the architect :—

C. Vigor & Co.	£1,339	F. G. Hatton	£1,152
W. E. Warman	1,247	Eldridge & Cruttenden	1,141
J. Lester	1,217	Padgham & Hutchinson	1,119
H. E. Cruttenden	1,210	J. Simmonds & Co., Hastings*	1,056
C. Harman	1,162		

* Amended tender accepted.

HENDON.—Accepted for alterations to stables, Belle Vue-road, Hendon, Middlesex. Mr. George Hornblower, architect, 20, Fitzroy-street, W. :—

Wm. Tout, Hendon £382

HULL.—For the supply of c.i. pipes, &c., North Ferriby, for the Sculcoates Rural District Council. Mr. W. H. Wellsted, Engineer, Prince's Dock-chambers, Hull :—

Fisher & Young	£174	13	8
J. Sangwin	138	10	0
A. H. Atkinson, 175, Walton-street, Hull*	135	11	0

* Accepted.

HORNCASTLE (Lincs.).—Accepted for the supply of 6,635 tons granite and 2,473 tons slag, for the Rural District Council :—

Granite.	Tons.	Per ton. s.	d.
Charnwood Granite Co., Loughborough	3,318 at	11	0
Walter & Hensman, Horncastle (Groby Granite)	3,317 at	11	2
Slag.			
Rutlin & Co., Wellingborough	850 at	8	2
Islip Iron Co., Thrapston	851 at	8	0
White & Co., Lincoln (Bestwood slag)	773 at	6	5½

ISLEWORTH.—For the erection of a joint isolation hospital at Mcgden, for the Corporation of Richmond and the District Council of Heston and Isleworth. Mr. W. J. Ancell, architect. Quantities by Mr. T. J. Cauless :—

	No. 1 Buildings.	No. 2 Roads and Sewers.	Total.
F. & H. Higgs	£13,100	£2,685	£15,785
Foord & Sons	12,723	2,413	15,136
T. W. Brooking	12,330	2,534	14,864
F. Hiscock	11,878	2,647	14,525
Soole	11,915	2,490	14,405
Chessman	13,160	2,130	14,290
W. S. Sorden	11,800	2,369	14,169
John Ham & Son	11,663	2,220	13,883
Patman & Fotheringham	11,953	1,891	13,844
W. Wallis	11,718	2,008	13,726
Messum	11,693	1,995	13,688
Godson & Sons, Kilburn-lane*	11,699	1,899	13,598

* Accepted.

LINGFIELD.—For alterations and additions to Ford Manor, Lingfield, Surrey, for Mr. R. Spender Clay. Mr. A. William West, architect, 44E, Maddox-street, London, W :—

A. Bush	£3,279	J. Longley & Co., Crawley (accepted)	£2,789
Patman & Fotheringham	3,273		

LONDON.—Accepted for alterations and additions to 2, Devonshire-terrace, Portland-place, W. Mr. George Hornblower, architect, 20, Fitzroy-street, W. :—

Wm. Tout, Hendon £1,326

LONDON.—Accepted for sanitary works at Montrell-road and Franconia-road, Streatham, S.W. Mr. George Hornblower, architect, 20, Fitzroy-street, W. :—

F. Stripp, 62, Metbrook-street, Peckham Rye, S.E. £210 13

LONDON.—For the erection of additional coal bunkers, at Creek Bridge Wharf, Greenwich, for Messrs. William Dowell & Co. Mr. Benaiah W. Adkin, architect, 14, Queen-street, Cheapside, E.C. Quantities by the architect :—

		Deduction if flat-bottomed bunkers.
Chafen & Newman	£5,994	£190
J. Mowlem & Co.	4,899	114
T. Docwra & Son	4,005	150
Clarke & Bracey	3,988	118
T. Gregory & Co.	3,986	104
Kirk & Randall	3,966	112
Holloway Bros	3,780	120
Harris & Wardrop	3,517	96
F. & F. H. Higgs, Station Works, Loughborough Junction, S.W.*	3,392	100

* Accepted.

LONDON.—Accepted for alterations and additions, 16, Clifford-street, W., for Messrs. McVicker & Middleton. Messrs. Bartlett & Son, architects. Quantities by Messrs. Stoner & Sons :—

N. Lidstone, Finsbury Park £2,335

LONDON.—For the completion of two houses, Telford Park, Streatham Hill, for Mr. Lees Knowles, D.L., M.P. Mr. F. H. Harvey, architect, 183, Lavender-hill, S.W. :—

E. Jones	£200	0	0
F. Crawford	194	15	0
Newmans, Limited	150	0	0
H. Brown	135	0	0
G. A. Rowley	£125	1	6
W. & H. Castle	120	0	0
W. E. Holmes	115	0	0

LONDON.—For rebuilding Nos. 416, 418, and 420, Holloway-road, for Messrs. Hart & Co. Mr. Wm. Eve & Son, architect, of 10, Union-court, Old Broad-street :—

Johnson & Co.	£4,848	Godfrey & Son	£4,540
Cox	4,812	Ward & Lamble	4,487
Patman & Fotheringham	4,751	Holliday & Greenwood	4,281
Harris & Co.	4,697		

LONDON.—For the erection of new housekeeper's rooms in Havil-street, for the Camberwell Vestry. Mr. D. S. Brown, Surveyor :—

H. H. Castle	£1,177	C. Ansell	£989
J. Ham & Son	1,097	W. Smith	855
R. W. Galbraith	1,025	[Surveyor's estimate, £670.]	

LONDON.—For repairs to the "Trafalgar," Merton-road, for Hodgson's Kingston Brewery Company, Limited. Messrs. Yetts, Sturdy, & Usher, architects, 44, Finsbury-pavement, E.C. :—

Hall, Bedall & Co.	£170	Petty & Son	£141
Battley & Co.	157	John Ham & Son*	118

* Accepted.

LONDON.—For alterations to the "Glasshouse Stores," Piccadilly-circus, for the Winchester Brewery Company, Limited. Mr. W. T. Moss, architect, 7, Gray's Inn-place :—

Irwin	£980	Drew & Cadman	£819
Lascelles & Co.	928	Ham & Son (accepted)	765

LONDON.—Accepted for decorations, &c., at "Cadeleigh," Herne Hill, for Mr. Edward Lovell. Messrs. Yetts, Sturdy, & Usher, architects :—

Messrs. J. Ham & Son £127

MORLEY (Yorks.). — Accepted for the erection of business premises, for the Industrial Co-operative Society, Limited. Mr. G. B. Clegg, architect, 2, Peel-street, Morley :—

Masonry.—James Clegg & Sons, Morley....
Joinery.—John Clegg & Sons, Morley .....
Slating.—John Atkinson & Son, Leeds.....
Ironfounders.—J. Rhodes & Sons, Morley..
Concreting.—S. McFarlane, Leeds.....
Plumbing.—A. Fawcett, Morley .....
Plastering.—W. Broadbent, Morley,..... } £5,147 2 2

MORLEY (Yorks) —For the erection of mill premises, for Mr. A. Glover. Mr. T. A. Buttery, architect, Queen-street, Morley :—

Masonry —Pearson & Ainsworth, Morley (labour only)	£1,200	0	0
Joinery.—G. Elliot, Hanging Heaton	1,337	0	0
Plumbing.—G. A. Firth, Morley	105	0	0
Plastering and Concreting.—W. Broadbent, Morley	270	17	10
Slating.—I. Atkinson & Son, Leeds	390	0	0
Ironfounding.—J. Rhodes & Sons, Morley	422	0	0

MARLOW.—Accepted for the erection of a shop at Bourne End. Mr. I. H. Deacon, architect, Great Marlow :—

H. Harris £575

MARLOW.—For brewery extension for Messrs. Thomas Wethered & Sons. Mr. J. H. Deacon, architect, Great Marlow :—

H. Harris	£395	I. Carter	£375
N. J. Lovell	380	W. & T. Sellman (accepted)	315

[Steel girders by Moreland & Son, London, E.C.]

MAIDENHEAD.—Accepted for alterations and additions to the "Swan Hotel," Maidenhead. Mr. J. H. Deacon, architect, Great Marlow :—

C. W. Cox & Son £197

MIDDLESBROUGH.—For the erection of a large block of buildings, Newport-road, for Messrs. J. & T. Sawer. Mr. W. G. Roberts, architect, 61, Albert-road, Middlesbrough. Quantities not supplied :—

Brickwork, &c. Warehouse only.

J. Lord'	£395	15	0
Brays Bros.	510	0	0
R. Doughty	£535	0	0

Do. and Plastering of Three Houses and Shop.

R. Doughty £574 6 0

Brickwork, &c., and Joinery. Warehouse only.

Perks & Son, Stockton-on-Tees* £732 0 0

Do. Three Houses and Shop.

Perks & Son, Stockton-on-Tees* £798 0 0

Joinery only. Warehouse and Three Houses and Shop.

W. Dale	£705	8	0
W. Thompson	826	16	0
R. Sweeting	£871	0	0
Hudson Brothers	881	0	0

Slating do.

J. Harrison, Middlesbrough*	£153	15	0
J. & R. Mascall	159	8	0

Plumbing, Glazing, and Gasfitting do.

Walton & Garthwaite, Middlesbrough*	£143	0	0
Curtis & Bowman	143	5	0
Baker Bros.	168	15	0

Plastering. Three Houses and Shop only.

F. Tomlinson, Middlesbrough*	£113	6	6
W. Tarran	125	0	0

[Total, exclusive of painting, £1,940 1s. 6d.]

Painting. Warehouse and Three Houses and Shop.

Liversedge, Middlesbrough £35 10 0

* Accepted.

NOTTINGHAM.—For the supply of granite, slag, and limestone for the County Council. Mr. E. Purnell Hooley, County Surveyor, Shire Hall, Nottingham :—

Granite.			
The Mountsorrel Granite Co. Ltd.	1,891	7	6
The Charnwood Granite Co.	510	3	9
The Forest Rock Granite Co., Ltd.	1,218	10	10
The Croft Granite, &c., Co.	301	15	5
The Groby Granite Co., Ltd.	100	15	10
The Enderby and Stoney Stanton Granite Co., Ltd.	319	5	0
The Narborough and Enderby Granite Quarries Co., Ltd.	98	11	3
The Cliffe Hill Granite Co., Ltd.	246	10	10
Messrs. Sommerfield & Mead	208	5	0
Slag.			
The Stanton Ironworks Co., Ltd.	920	14	3
The Bestwood Coal and Iron Co., Ltd.	267	16	3
The Sheepbridge Coal and Iron Co., Ltd.	671	2	6
The Butterley Co., Ltd.	79	15	10
Markham & Co.	521	19	2
T. Elliott	30	18	9
J. W. Clifton	54	14	2
J. Clifton	110	3	4
Limestone.			
W. & J. Moseley	19	19	2
Constable & Co.	6	5	0
	£7,378	13	10

OXENHOPE (Yorks.).—Accepted for the erection of store premises and seven houses, Station-road, for the Uppertown Industrial Co-operative Society, Limited. Mr. John Haggas, architect, North-street, Keighley :—

Masonry.—Jonas & John Crabtree, Crummock, Oxenhope
Joinery.—Heston Whitaker, Uppertown, Oxenhope
Slating.—Hill & Nelson, Bradford
Plastering.—Geo. Edmondson, Lees, Keighley
Plumbing.—Frank Raw, Station-road, Oxenhope. } £1,800

PENRITH.—For erecting two cottages at Clifton, near Penrith, for Mr. R. Todd. Messrs. G. Watson & Son, architects, 3, St. Andrew's-place, Penrith :—

Masonry.

Davidson & Hope	£379	13	5
J. Lewthwaite	368	15	0
Dixon & Gardiner, Penrith (accepted)	£305	0	9

Joinery.

J. Sarginson, Eamont Bridge (accepted) £171 0 11

Slating.

J. Lowthian	£41	3	3
J. Bailey, Penrith*	£38	2	0

* Accepted.

Plumbing, &c.

J. Jackson	£65	15	6
J. Purdie	64	9	0
G. Carruthers	60	0	0
G. Smiley, Penrith*	59	0	0

* Accepted.

Contract Nos. 1, 3, and 4.

G. Dixon, Penrith £493 9 2

NEW BROMPTON (Kent).—Accepted for the erection of four houses in Station-road. Mr. F. Smith, architect, Bank Chambers, New Brompton, Kent :—

H. Harris £680

PENRITH.—For the erection of a farm-house at Colt-close, near Ivegill, for Mr. J. W. Nelson. Messrs. G. Watson & Son, architects, 3, St. Andrew's-place, Penrith :—

Masonry, Walling, &c.

W. F. Pickering	£669	0	0
Dixon & Gardiner	663	7	9
T. Lowthian, Plumpton (accepted)	£575	0	0

Joinery.

Park Bros.	£560	0	
W. F. Pickering	449	0	
J. Brown	412	0	
G. Foxcroft	373	0	
J. Longrigg	350	0	
J. Richardson	£336	10	
J. Moore & Son	329	12	
J. Richardson & Son, Penrith (accepted)	315	0	

Slating.

T. Lowthian	£82	10	
W. F. Pickering	81	15	
J. F. Kellet	81	0	
J. Lowthian	£76	19	4
J. Bailey, Penrith*	72	6	0

* Accepted.

Plumbing, &c.

C. McDonald	£182	0	0
G. Smiley	170	0	0
G. Carruthers	149	10	0
J. Purdie	£130	18	2
J. Jackson, Penrith*	121	9	11

* Accepted.

Masonry and Slating.

G. Dixon, Penrith ..... £724 16.

ROCHDALE.—For the erection of three houses, Howarth Cross-street, Halifax-road, for Mr. Kershaw. Mr. H. S. Nicholl, architect, 1A, Mount-street, Rochdale :—

Joinery.

T. Marshall, Halifax-road, Rochdale*	£468	15	
Endersby & Mutch	142	10	
Bussy & Lord	£132	25	
E. & L. Rigg	114	0	
Schofield & Jones	112	0	

Plumbing.

A. Holroyd	£22	10	0
J. Marsden	21	0	0
Hewerdine & Dawson	£19	10	0
T. Barker	19	2	6

Bricklaying.—Cropper & Howarth	£220 10 0
Masonry and Contracting.—Samuel Nicholl	114 0 0
Slating —Alfred Haigh	35 0 0
Plastering.—W. Airey	24 0 0

* Accepted for the whole of the works

SURBITON.—Accepted for the erection of a detached residence in Lovelace Gardens, exclusive of internal decorations. Mr. R. Lano Pearce, architect, of 100c, Queen Victoria-street, E.C., and at Surbiton :—

George Burrage, Sutton £1,192

SWINDON.—For the erection of smallpox hospital and caretaker's house, Gorse Hill, for the Hospital Board. Mr. William Drew, architect, 22, Victoria-street, Swindon :—

		Extra for Broseley Tiles.
J. Hatherley	£1,053 0 0	£33 0 0
T. Barrett	910 0 0	12 10 0
J. Williams	882 0 0	10 5 0
Flewelling & Huckson, Swindon and Wootton Bassett*	852 15 0	6 0 0
A. J. Colborne	709 15 6	7 10 6

* Accepted.

SWINDON.—For the erection of new club buildings, in Fleet-street, New Swindon, for the North Wilts Conservative and Liberal Unionist Club. Mr. William Drew, architect, Victoria-street, Swindon. Quantities by the architect :—

Benfield & Loxley	£3,133	0	
Flewelling & Huckson	3,089	0	
T. Barrett	2,888	0	
T. Colborne & Son	2,867	5	
W. Jones	£2,850	0	
C. Williams, New Swindon*	2,627	0	

* Accepted.

WOKINGHAM.—For new offices, &c., for Messrs Gadd & Company, Limited, of Wokingham. Mr. A. E. Sidford, architect. Quantities by Mr. A. J. Foster :—

H. Clark	£459	J. B. Seward	£448

[Architect's estimate £459].

[Bricks supplied and delivered free on site by employers.]

LONDON SCHOOL BOARD TENDERS.

At the last meeting of the London School Board, the following lists of tenders were submitted by the Works Committee :—

CHATHAM GARDENS. — Exterior painting and interior cleaning :—

F. Britton	£439	17	6
W. Shurmur	297	0	0
McCormick & Sons	271	0	0
W. Lawrence	251	9	0
W. Silk & Son	£248	10	0
J. T. Robey	240	0	0
S. H. Corfield	224	0	0
G. Barker (accepted)	219	10	0

GLENGALL-ROAD.—Refitting closets and offices, &c. :—

G. Parker	£1,856	J. Willmott & Sons	£1,720
W. Downs	1,855	E. Lawrance & Sons	1,690
Dove Bros.	1,825	J. T. Robey	1,650
E. Triggs	1,729	J. Shillitoe & Son	1,690
J. & C. Bowyer	1,728	G. Munday & Son*	1,581

HAGGERSTON-ROAD.—Facing up flank walls, and providing buttresses, water-closets, &c. :—

R. E. Clarke	£663	0	
W. Irwin	632	0	
W. Gregar & Son	572	0	
F. Britton	510	0	
McCormick & Sons	£460	0	
J. Kiddle & Son	458	10	
J. T. Robey	457	0	
Staines & Son*	449	0	

"HIGHWAY."—Erecting junior mixed school, &c. :—

		Extra amount required for building brickwork in cement.
J. Allen & Sons	£8,605	£150
W. Gregar & Son	7,956	130
Dove Bros.	7,670	150
Killby & Gayford	7,596	149
G. Munday & Sons	7,563	145
G. S. S. Williams & Son	7,300	114
J. & M. Patrick	7,284	73
W. Shurmur	7,257	119
Treasure & Son	7,166	110
E. Lawrance & Sons	7,111	110
C. Cox	7,026	110
Stimpson & Co.*	6,980	146

MILLFIELDS-ROAD.—Erecting cookery and laundry centres, and science-room, &c. :—

		Extra amount required for building brickwork in cement.
Dove Bros.	£3,200	£35
J. Grover & Son	3,081	33
T. Boyce	2,784	85
E. Lawrance & Sons	2,772	32
W. Shurmur	2,709	72
G. S. S. Williams & Son	2,668	41
J. & M. Patrick	2,569	27
C. Cox*	2,469	27

SUPPLY OF DRY GAS METERS.

Size of Meters.	W. & B. Cowan, Lim.	G. Glover & Co.*	T. Glover & Co., Lim.	D. Hulett & Co., Lim.	W. Parkinson & Co.	Frank Wright's Pre-Payment Gas Meter Corporation, Lim.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
3-Light Dry Gas Meters, delivered complete, each	1 3 10	1 3 10	1 3 10	1 1 0	1 3 10	1 2 6
5 " " " "	1 8 11	1 8 11	1 8 11	1 4 6	1 8 11	1 7 6
10 " " " "	1 17 7	1 17 7	1 17 7	1 12 0	1 17 7	1 15 0
20 " " " "	2 11 8	2 11 8	2 11 8	2 5 0	2 11 8	2 8 0
30 " " " "	3 11 2	3 11 2	3 11 2	3 3 0	3 11 2	3 7 0
50 " " " "	4 18 6	4 18 6	4 18 6	4 5 0	4 18 6	4 12 6
60 " " " "	6 12 0	6 12 0	6 12 0	5 15 0	6 12 0	6 4 6
80 " " " "	8 7 4	8 7 4	8 7 4	7 5 0	8 7 4	7 17 0
100 " " " "	10 16 6	10 16 6	10 16 6	9 10 0	10 16 6	10 3 6
120 " " " "	11 17 0	11 17 0	11 17 0 -	....	11 17 0	11 2 0
140 " " " "	....	....	....	....	....	....
150 " " " "	14 19 0	14 19 0	14 19 0	13 10 0	14 19 0	13 17 6
180 " " " "	....	....	....	....	....	....
200 " " " "	19 19 1	19 19 1	19 19 1	17 10 0	19 19 1	18 10 0

* Recommended for Acceptance.

SIGDON-ROAD.—Providing and fixing complete low-pressure hot-water apparatus and Trentham boiler:—

J. C. & J. S. Ellis, Ltd.	£675 0	Strode & Co.	£498 0
H. C. Price Lea & Co.	655 0	Richardson & Co.	468 15
Maguire & Gatchell, Ltd.	647 5	J. F. Clarke & Sons*	460 0
G. Davis	576 0		

* Recommended for acceptance.

SOUTHAMPTON-STREET.—Rebuilding offices, &c.:—

Lathey Bros.	£919	W. V. Goad	£864
J. Garrett & Son	898	Holliday & Greenwood	861
G. Parker	893	W. & H. Castle*	790
Johnson & Co.	883		

WINDSOR ROAD.—Erecting new schools:—

		Extra amount required for building brickwork in cement.
W. C. Tyrie	£30,093 3 2	£286 13
J. Longley & Co.	25,366 0 0	410 0
J. Allen & Sons	25,338 0 0	410 0
R. A. Yerbury & Sons	25,153 0 0	391 0
D. Charteris	24,450 0 0	425 0
Killby & Gayford	24,446 0 0	410 0
J. Grover & Son	24,312 0 0	391 0
W. Shurmur	24,290 0 0	390 0
W. Gregar & Son	24,150 0 0	340 0
E. Lawrance & Sons	24,093 0 0	390 0
G. S. S. Williams & Sons	24,040 0 0	415 0
W. M. Dabbs	23,980 0 0	385 0
Treasure & Son	23,795 0 0	394 0
C. Cox	23,561 0 0	390 0
J. & M. Patrick*	23,337 0 0	260 0

WINSTANLEY-ROAD.—Interior painting:—

R. E. Williams & Sons	£360 0	J. Garrett & Son	£313 0
Rice & Son	351 0	Maxwell Bros., Limited.	303 0
Lathey Bros.	339 0	G. Foxley	284 10
E. B. Tucker	338 10	F. Flood	269 9
G. E. Nightingale	327 0	E. Triggs (accepted)	247 0

WOLVERLEY-STREET.—Interior painting:—

Johnson & Co.	£481 10	A. W. Derby	£326 0
Marchant & Hirst	416 0	J. Kybett	311 0
T. Nicholson	410 0	S. H. Corfield	305 0
W. Shurmur	396 0	G. Barker*	283 0
J. T. Robey	342 0		

* Accepted.

Gas Coppers for Schoolkeepers.

H. S. Timpson	each	£1 10 6
J. C. & J. S. Ellis, Ltd.	"	1 7 0
Rownson, Drew, & Co.	"	1 3 6
Smallbone & Sutton	"	1 1 0
O'Brien, Thomas, & Co.	"	0 19 3
R. H. & J. Pearson, Ltd.*	"	0 19 0

Trolleys.

		4 ft. 6 in. by 2 ft. 5 in.	4 ft. by 2 ft.
Illingworth, Ingham, & Co.	each	£7 10 0	£7 10 0
Wake & Dean	"	6 10 0	6 2 0
T. Cruwys	"	6 0 0	5 10 0
H. Bouneau	"	5 18 0	5 16 6
H. Addison & Co.	"	5 5 0	5 0 0
G. M. Hammer & Co.*	"	5 0 0	4 17 0

Rack Cupboards.

Rice & Son	each	£4 19 0
Illingworth, Ingham, & Co.	"	4 17 6
H. Bouneau	"	4 9 0
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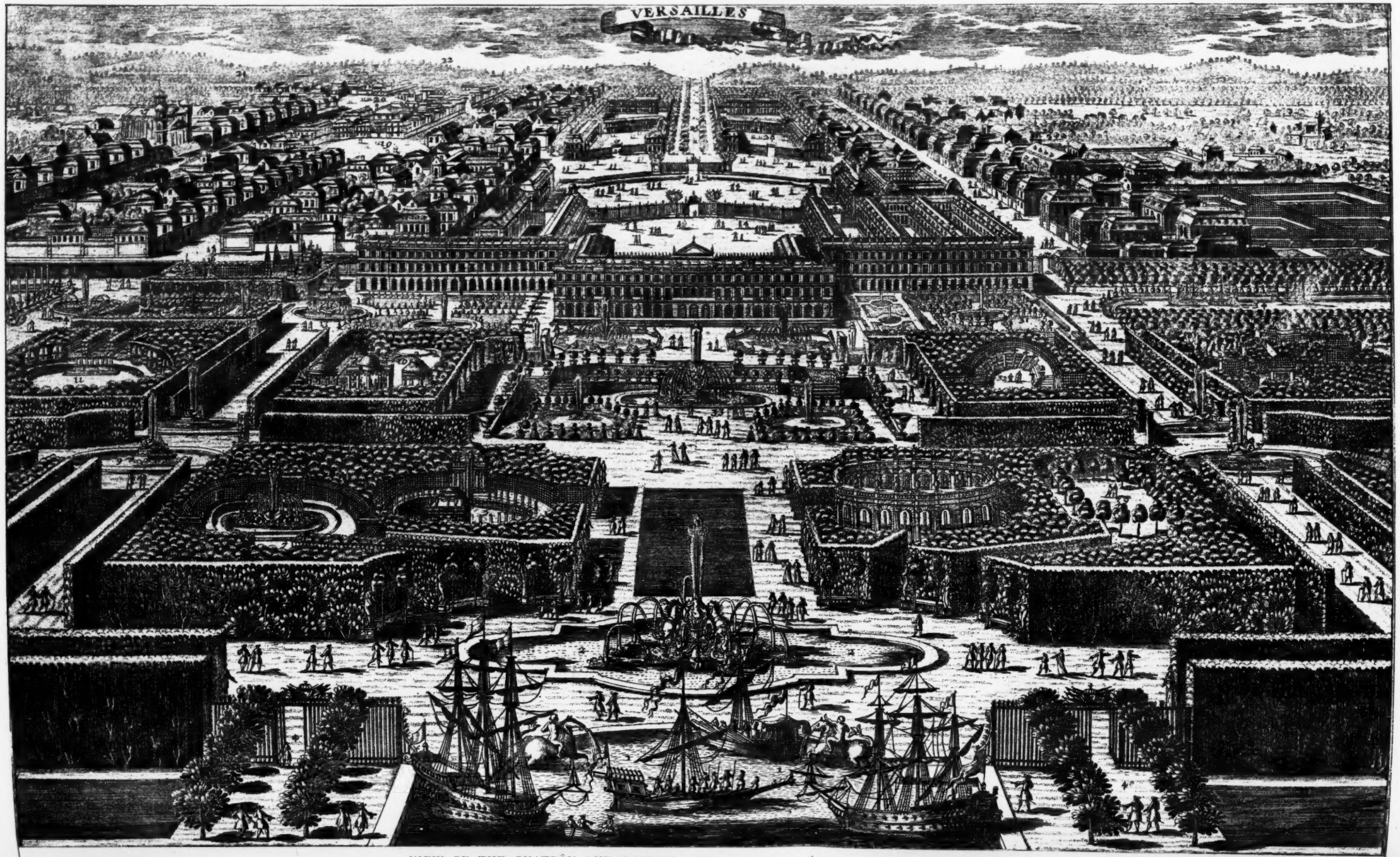

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1. The Canal.
2. Bassin d'Apollon.
3. [illegible]
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5. Salle des Pavillons.
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8. Le Printemps.
9. [illegible]
11. Theatre d'Eau.
12. The Three Fountains.
13. Fountain of the Pyramid.
14. Bassin du Dragon.
16. Arc de Triomphe.
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18. Clagny.
19. [illegible]
21. The Aqueduct.
22. Montreuil.
23. Chapel of the Château.
26. Grande Écurie.
27. Grand Commune.
28. The Kitchens.
30. Rhenish Garden.
31. Orangery.
32. Salle des Danses.
33. Fontaine de la Tone.
35. The Labyrinth.
36. L'Automne.
37. L'Hiver.
40. Entrance to the Grand Park of the Menagerie.

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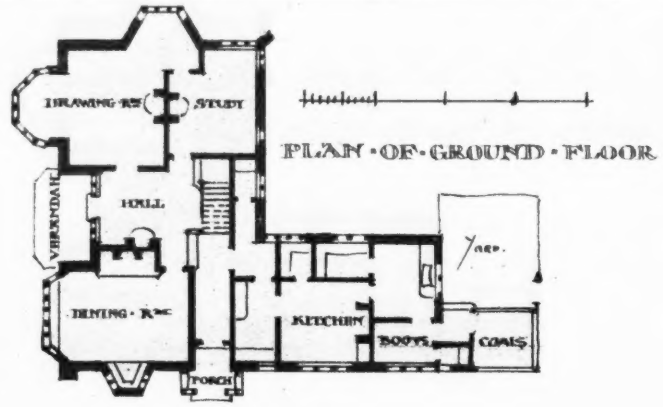

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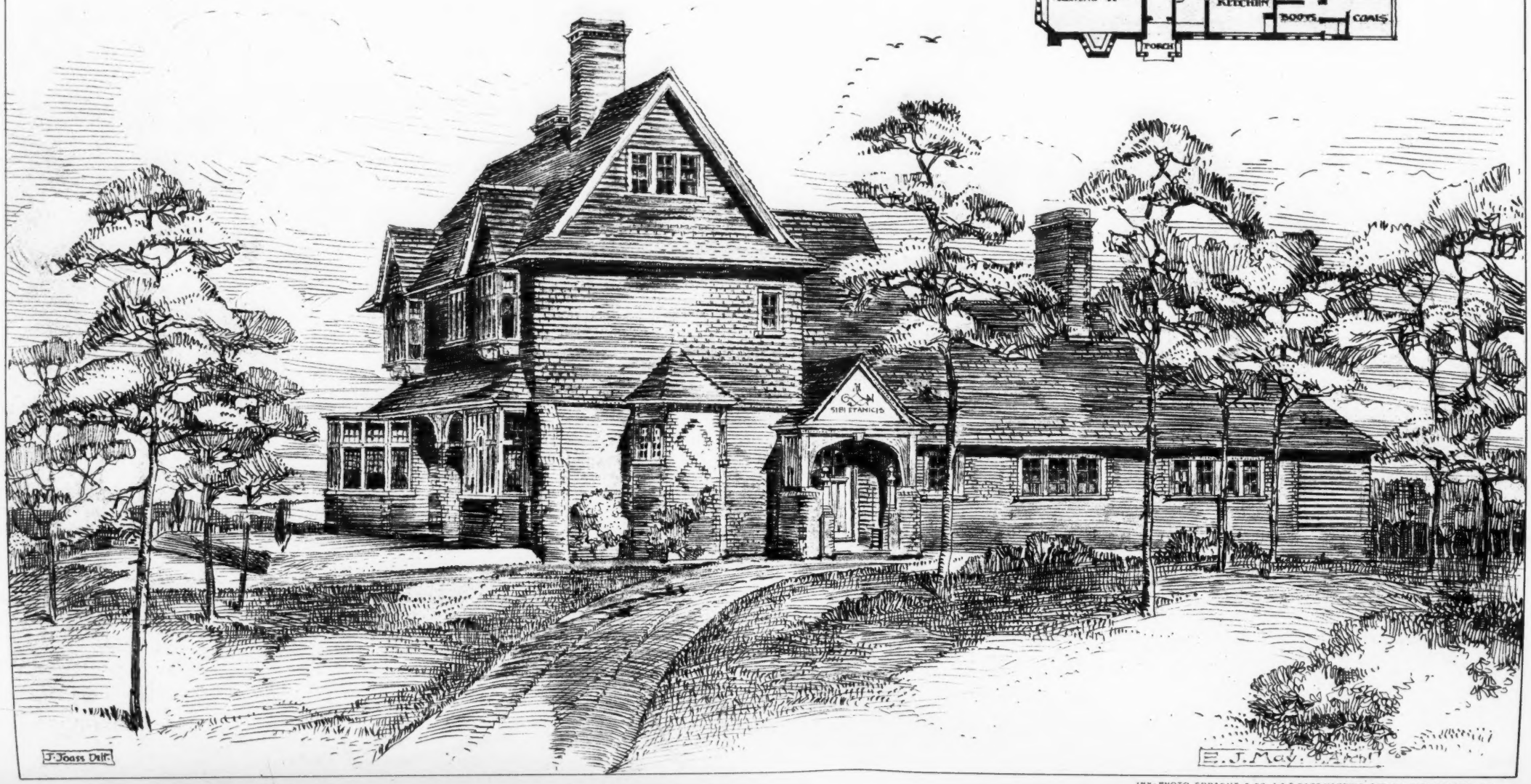

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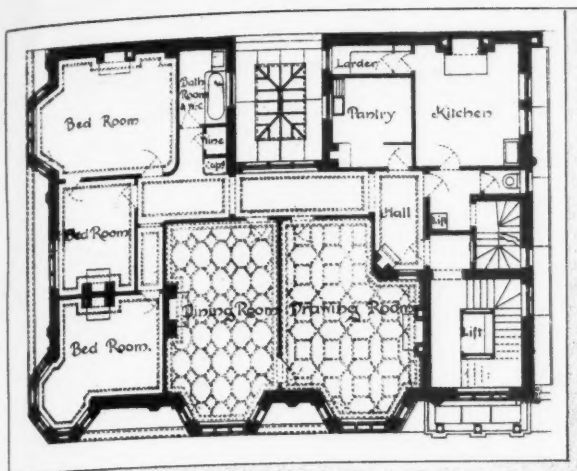

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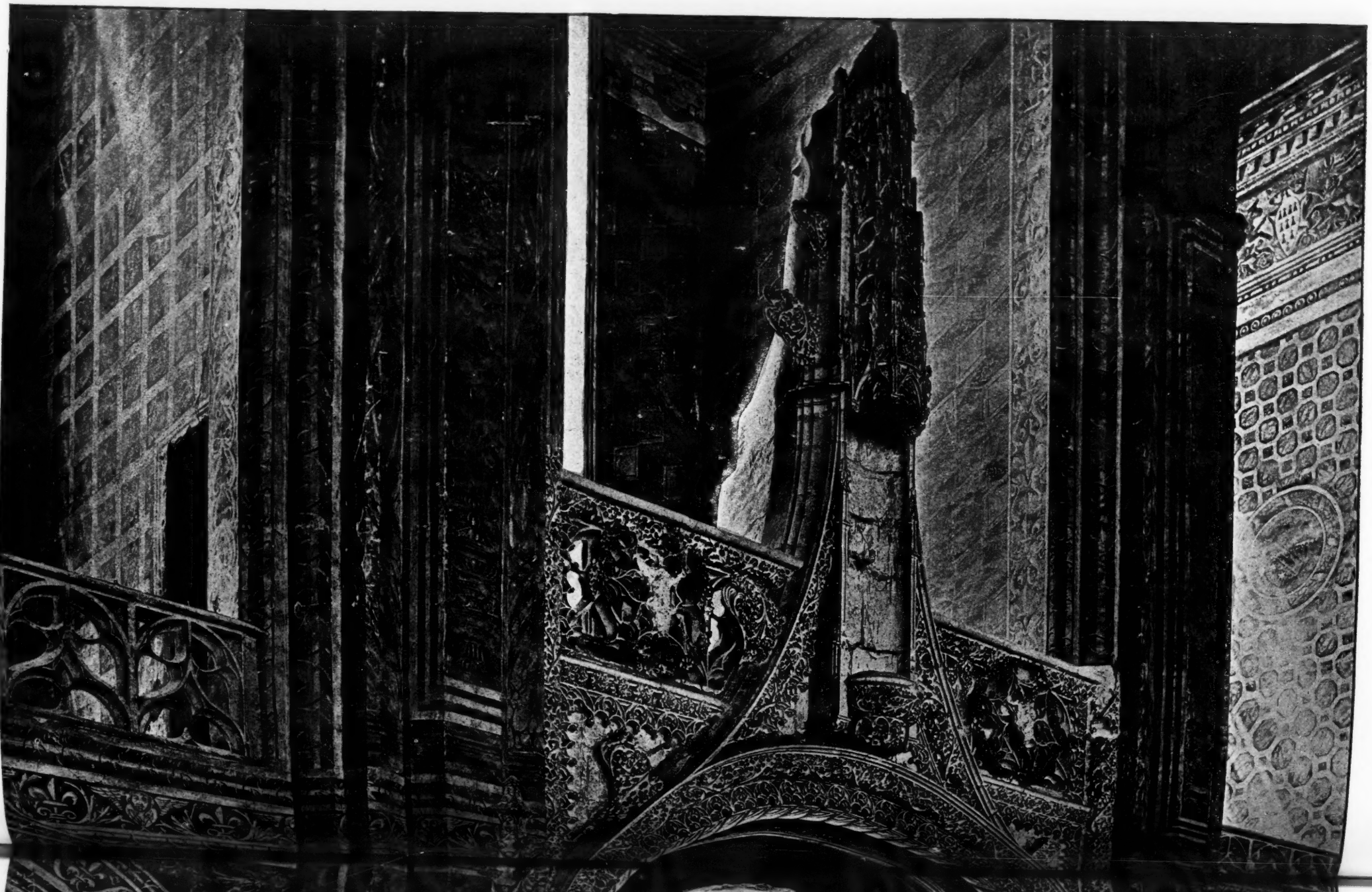

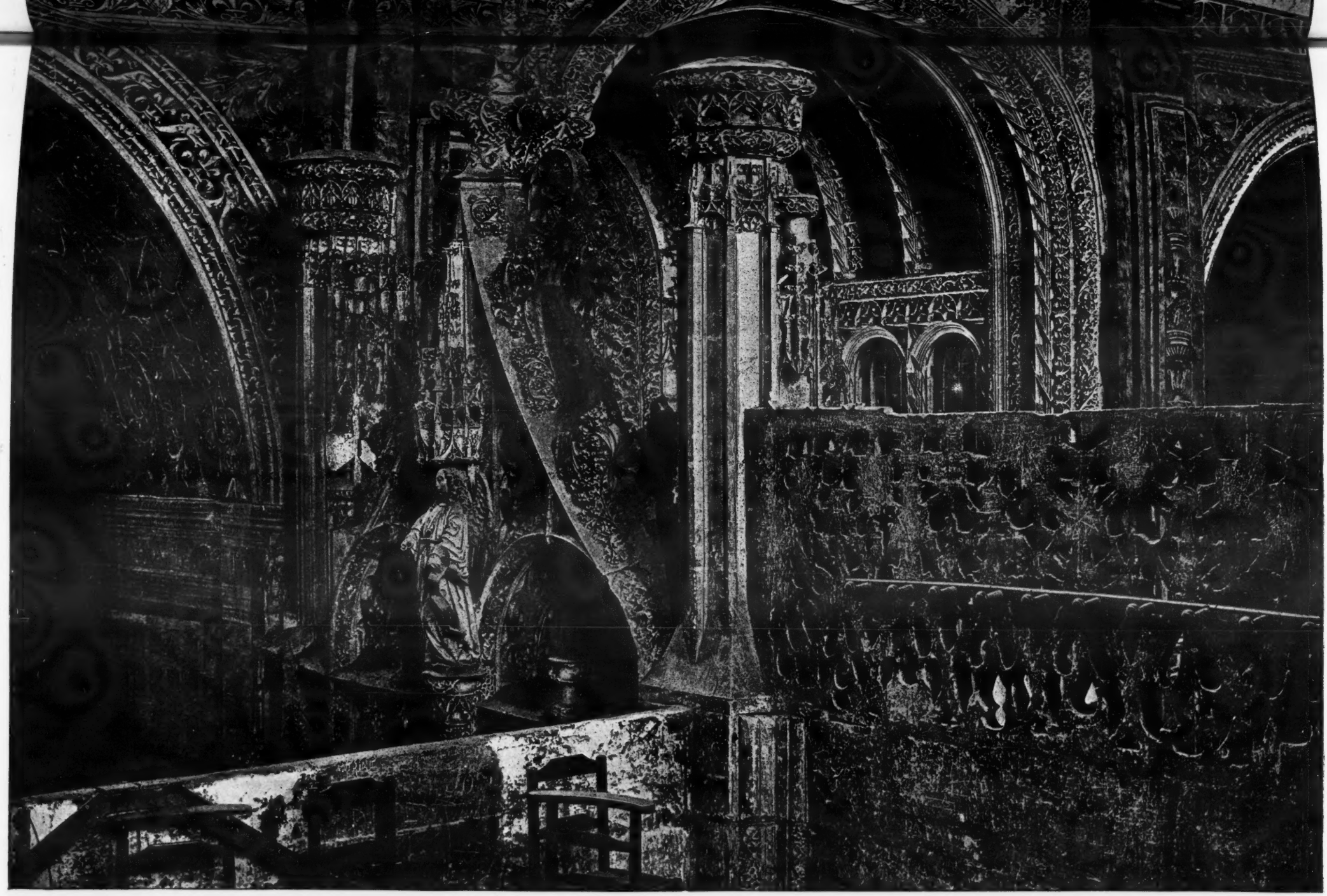

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